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## THE BOOKKEEPING OF HUMANITY*


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The accurate collection, tabulation and analysis of records of births, still-births, deaths, marriages, divorces, and sickness may be said to constitute the bookkeeping of humanity. The bookkeeping of dollars is very important, but of far greater importance is the bookkeeping of those events in the lives of human beings which are fundamental to an understanding of the movements of mankind, and which are also fundamental to the practical application of hygiene, to secure higher efficiency, longer duration of life and fuller measure of happiness.

Without vital statistics, a nation cannot know its vital latitude and longitude, its national time of day on the great ocean of time. Through vital statistics a nation is able to know its temperature and pulse, and follow and understand other vital functions. Or, again, its vital potentialities are reflected and comprehensively expressed in such statistics.

To live a successful life, a man must notice the symptoms which forecast his demise, that he may take action to neutralize them or to prepare for his end; and so should a nation carefully collect and keep such checks and balances that tell of increase or decrease in numbers, and causes affecting the same, and which tell the status of social conditions, so that the question of living or dying may be rationally considered. We have this illustrated in the case of France, where lately vital statistics disclosed the fact that the death-rate exceeded the birth-rate, thus forecasting, if the conditions continued, the demise of a great nation.

Human life in its beginning, its duration and ending, is the predominant consideration in all personal, social, state and national problems. The standing of a nation is finally to be measured by the standard of human lives.

No thoughtful person denies these facts. Yet, what a surprise it is, yes, a shock, to remember that we ignore in great degree these important matters. We do not fail to keep records of all legal procedures, of all commercial transactions, no matter how insignificant; we will deny ourselves needed rest and sleep to record a little or big real estate deal; we will keep careful minutes of a town meeting or of a social club; yet in many states a human being, made in the image of God and endowed with an immortal soul, can be born and can die without any public and frequently no private record of the fact. However, it is not so with animals and plants. For them, elaborate systems record their birth, entire career and death. Every pedigreed calf, colt, dog, rooster, ram, and even cat, has its birth and death recorded; yet children, our hostages to fortune are born, and fathers and mothers die, without record. The National Government at the cost of millions annually maintains a Bureau of Animal Industry which looks after hog cholera, Texas fever and sheep rot, keeping accurate statistics; it also maintains at a cost of millions annually a Department of Agriculture, which collects crop statistics, beef, pork, poultry and mule statistics, but in not a single place in the whole country do we so accurately know the number of cases of diphtheria and the deaths from this cause among our babies. These conditions make one ask, "Is civilization a failure or has the Caucasian played out?"

### IMPORTANCE OF VITAL STATISTICS TO THE INDIVIDUAL

Besides the general importance of vital statistics to a nation as a nation, they also have an importance of the greatest moment to the individual. For instance, by vital statistics must be determined the right to attend school, to enter certain occupations, to vote, to marry, to hold or to dispose of property, to employment by the state or country in military or civil service; responsibility for crime or misdemeanor; exemption from military or jury duty; qualifications or disqualifications for certain public offices; and privileges and immunities of a public nature; also private contracts in great variety, as in insurance and partnership. Indeed, there is hardly a relation from the cradle to the grave in which the evidence furnished by accurate vital statistics may not prove of the greatest individual and general, social or governmental value. The two great important events in the lives of men are birth and death; the alpha and omega, the beginning and the end. For a state not to make these events of accurate record for each individual is to neglect to keep abreast of practical civilization; yes, to be really civilized.

### SANITARY VALUE OF VITAL STATISTICS

The public and individual value of vital statistics has been briefly set forth, but after all, their sanitary value is of greater importance. The value of the practical application to every-day life of the ounce of prevention, will hardly be disputed; and surely the prevention of disease constitutes the very crown of scientific medicine. The connection between the accurate registration of the existence of infectious diseases, of all deaths and the causes of death, and the practical prevention of disease, seems to be apparent. Whatever throws light on the causes of sickness and death, or whatever hastens or retards marriages or increases or decreases the number of births, must be helpful, yes, vitally necessary; but to be so, must have numerical treatment.

* Chairman's address before the Section on Preventive Medicine and Public Health of the American Medical Association, at the St. Louis Session, June 7-10, 1910.

Plainly, the capable health officer must have vital statistics at hand to be efficient in instituting such measures as are reasonable and necessary to prevent disease. The general must know the position, numbers, equipment and character of his enemy in order to carry on a successful battle. So for a successful fight the hygienist must have a like knowledge of his enemy.

### EDUCATIONAL VALUE OF VITAL STATISTICS

Then there is the educational value of vital statistics. Need this point be dwelt on? Is it required to show how the relative destructiveness of the various diseases, the death-rates and sickness-rates from them, would educate the people to the necessity of action? The fact that the number of deaths from tuberculosis leads all the rest, the fact that pneumonia is the next greatest cause of death, and other life facts, are surely of the highest educational value. To convince and lead to action the keepers of the public purse so that the state can do her part in disease-prevention, vital statistics are absolutely essential. Surely, sanitary administration will be defective where vital statistics are wanting, and it will be efficient where they are accurate and complete. Low ideals of cleanliness and of health, accompanied by low ideals of morals, will exist to a greater degree where vital statistics are ignored than where they are accurately collected. Immediate records of births and deaths should be made, because experience teaches that an accurate record in all cases cannot or will not be secured unless reports are made forthwith and at once. The fact which should be given on birth and death certificates are now pretty well determined, and to the practitioner of medicine alone belongs the highly important duty, and also the privilege in cases of death, to render a correct statement of cause of death. The science of medicine, in the person of the medical attendant, is the only possible source of this knowledge which is fraught with such great importance to the family of the dead, to society at large and to medical science.

### REPORTING INFECTIOUS DISEASES

Every parent naturally wishes to protect his household against disease, just as he would protect against the rending of wolves or the sting of serpents. To have this protection, the aid of the physician is necessary, and gladly should the aid be given. When the infection of scarlet fever or other transmissible disease appears in a household, it is indeed wicked for any person possessing the information not to lend his most efficient help to prevent its extension. A physician negligent in reporting an infectious disease which comes under his care, or negligent in warning and instructing the family in regard to the preventing of transmission to others, is an enemy to society, an enemy to himself and an enemy to the profession of medicine. More, he is a dangerous member of society and should be hunted down and brought to book as would a poisoner of wells, the assassin, or the incendiary. In reporting an infectious disease, that proper measures for control may be instituted, the physician not only renders a service to society, for which society might well pay, but he also renders help to his neighbors, he helps himself, he performs a Christian duty, he performs a service to scientific medicine and fulfills his Hippocratic oath.

If the patron asks a physician not to make public the fact that an infectious disease exists in his house that he may not be troubled with placard and quarantine, let the physician kindly and firmly, with proper exposition of the law and with gentle reminder of the Golden Rule, give his absolute refusal. Let not the representative of the noble and learned profession of medicine for one instant enter into even the shadow of an act which is contrary to the statutory law and which opposes that divine rule of action, "Do unto others as you would have them do unto you."

As to compensation for service in reporting infectious diseases: The public can well afford to give compensation but in case it does not, still the duty of reporting and the honor of fulfilling the duty remain with the physician. We often hear quoted the clause of the Constitution which says in effect that all services rendered to the state shall be paid for; but let us look into this proposition. If required to return many data the physician should certainly be paid therefor, but for the return of the simple fact of the existence and location of an infectious disease, he is not altogether entitled to pay nor should he ask it. The right of the government to require that the physician be licensed need not be argued; the license system is desired by the profession. But what is a license? As regards infectious diseases the license is clearly granted to deal with this class of cases on the tacit understanding, first, that he has the diagnostic ability to recognize these cases when he sees them; second, that he will promptly give the state the benefit of his special knowledge.

The special duty of reporting infectious diseases, is, therefore, imposed when a license to practice medicine is asked for and granted. It has been argued in courts that the payment of fees for reporting the presence of infection would be as contrary to a proper public policy as to give fees for reporting a fire or for reporting a theft clearly seen in operation.

### VALUE OF VITAL STATISTICS TO MEDICAL SCIENCE

Medical science, like all other sciences, must, for its development, have coordination of the facts, and numerical expression must be given. In the numerical relations of recoveries to deaths, in the numerical relations of the destructiveness of the various diseases, in the numerical relation of diseases and deaths compared with various age periods, in the numerical relations of sex, nationality, social condition and occupations and employments, scientific medicine finds much valuable material for her advancement. All of these relations and also other facts are supplied by vital statistics. Every true physician is in love with his profession; he would have it make all advancement possible and will always lend his aid and services to such end.

It follows then, that for the science he has adopted for his life work, if not in the service of his patients and if not in the service of society, he will gladly and eagerly contribute his part to vital statistics.

### ACTUAL INSTANCES

Two actual instances showing the responsibility of physician to family in the matter of reporting births will probably serve a good purpose. A young man and wife came from Switzerland to Indiana. They were hardy, honest, and industrious, the very kind of people needed to make a nation. They settled in Switzerland County, probably being attracted by the name. In time a child, a girl, was born to them. The father was thrifty and intelligent and within three years became a foreman in a saw-mill. When his child was about two years old the father was accidently killed by a log rolling over him. Time had not been sufficient for him to accumulate property. So the wife struggled with wash-tub and needle to support herself and child. One day the news

came that a brother of the father, the child's uncle in Switzerland, had left $12,000 to the issue of his brother. Great was the rejoicing, which on account of the neglect of a physician to record the birth, was to become bitter sorrow. Before the Swiss government would turn over the property it must have proof that the little child was the issue of the dead man. As said, the physician had made no record and now he was dead. Neighbors know of the birth of the child but could not testify except as to their belief of the fatherhood. The testimony of the mother was not admissible in her own country for she could lead any child into court and declare any man to be its father. It was the physician's birth certificate made at the time of birth and presumably in the presence and by the authority of the father, that the law demanded. It could not be produced, and the helpless infant whom the physician should have been eager and happy to protect and serve, lost its inheritance. What a cruel and unnecessary blow was this, from the hand of a practitioner of the learned and benevolent science of medicine! Surely, a physician's duty to the families he serves and to the helpless infants he pilots into this world, are not fully performed until he has made out a certificate of birth and taken reasonable care that it is made of due legal record.

Another incident. Farmer Hadley, of Indiana, dying, left his valuable farm in trust to his unthrifty son, to go to his granddaughter on her twenty-first birthday. The girl had been told the date of her birth and always celebrated as her birthday the annual recurrence of the same. However, when she believed she was twenty-one, and then claimed her inheritance, her father denied her age, saying she was only nineteen. The family Bible was appealed to, but the leaf with the family record was gone. No birth record had been rendered, and the attending physician was dead. The court was in a quandary. A Solomon was needed for judgment. At last a neighbor remembered that a valuable cow belonging to the grandfather had given birth to a calf on the day the girl was born, and he could swear to it. Perhaps the grandfather had recorded the date of the birth of the calf. His farm books showed this to be the case. The date of the birth of the human being was established.

### SUMMARY—CONCLUSIONS

The importance of vital statistics to the family, to the state, and to medicine, can hardly be overestimated. The physician, the representative of the science of medicine, is, except in instances, the only member of society who can supply information in regard to causes of deaths and the presence of infectious diseases. As it is of very great importance to the family that its births, deaths, and cases of infectious diseases be legally recorded, and as the family presumably pays for the physician's services, the physician, therefore, should not consider his services fully performed nor that he is entitled to his fee until the certificates which are of such great importance are duly made. And again, the physician should remember when reporting vital statistics, that he is giving obedience to the statutes of his state, on which he depends for protection; that he is protecting the helpless; that he is doing a general good, and that he is serving the science of medicine.

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### ABSTRACT OF DISCUSSION

DR. PRINCE A. MORROW, New York: The subject is most important, but attention should be called to the fact that there is a large and important class of diseases which are infectious, and dangerous to the public health, but which are practically ignored in our system of vital statistics.

In few of our vital statistics is there mention made of deaths from gonococcus infection, or from syphilis. Now, we all know that these diseases figure very largely as causes of death, for instance, in England and Wales, during the year 1907 there were 1,840 deaths recorded from syphilis. Dr. Osler, in commenting on this statement, says that if we are to appreciate the importance of syphilis among the deadly maladies, we must include the deaths from paresis, and locomotor ataxia, half at least of the deaths from softening of the brain; and other diseases of the nervous system. He estimates that at least 6,000 or 7,000 are annually slain every year in England and Wales by syphilis directly.

Now, this list of 6,000 or 7,000 deaths does not embrace the vast number of still-born children dead from syphilis. He says, in addition to this, if we include in this category the deaths from the coccus of Neisser we shall find that there should be debited to the venereal diseases many thousands of deaths annually—a mortality that comes only after tuberculosis, pneumonia and cancer.

Another point is that in the presence of any infectious disease the cardinal obligation of the physician is to prevent the extension of the disease, and the infection of others, but in the case of syphilis the only duty of the physician, as he understands it, is to cover up and conceal the fact—to protect the secret of his patient. He does not seem to consider it a part of his duty to protect the other members of the household or the public from this very infectious disease. As Dr. Hurty intimated, we can never educate the public in this disease unless we tell the truth. The public has no conception of the enormous extent to which these diseases prevail.

The medical profession has not recognized its obligations to the public in this regard; and if a reform in vital statistics is to be instituted, I know of no one who is better qualified and who is more likely to inaugurate this innovation than the very able and courageous secretary of the Indiana State Board of Health.

DR. ARTHUR R. REYNOLDS, Chicago: Dr. Hurty's paper is most timely and should be placed in the hands of every physician throughout the country. I have always believed that it was the duty of all physicians to report cases of contagious diseases as well as births. They owe it to the public in return for privileges they enjoy. I think that most physicians think so, too; but often they neglect it, and sometimes assert that they should be paid for it. The pathetic instances and forcible illustrations that Dr. Hurty has given show that the duty is binding on us all.

DR. P. M. TOWNSEND, Marshalltown, Ia.: I attended a charity patient with a neglected case of chancroid—gonorrhea and syphilis—one of the worst cases that I ever handled. The girl was unmarried, and pregnant; and all summer I dreaded the decision as to what my duty was in regard to protecting other physicians. Knowing that the family was poor and that there would be no financial inducement for the physician to undertake the risk, I feared to report the case to the other physicians in the county, lest they might refuse to attend the case when the girl came to the time of confinement. Before I had decided what my duty was toward my fellow practitioners, the girl miscarried and called for a physician, and the secretary of the county association attended her. Later on I learned that a woman who was present at the time, and had to administer the anesthetic, knowing something of the neighborhood gossip in regard to the case, wanted to know if there was any danger of her "getting anything," and thus called the physician's attention to the possibility. Up to that time he had examined the patient without uncovering her person, but he then, in very great exasperation, having looked at the skin and external genitalia, scarred by the chancroids, said that if he had known what kind of a case it was he would not have attended it for a hundred dollars. We need more publicity in regard to venereal diseases, for our protection as well as for the protection of the public.

DR. HENRY B. HEMENWAY, Evanson, Ill.: Certain diseases like smallpox are common-law nuisances; in other words, the courts have decided that they are nuisances, and therefore reportable. Most diseases are not common-law nuisances. For example, malaria should properly be reported; but it is not a

common-law nuisance, and so legally it can hardly be required to be reported unless the statutes specifically mention it. If gonorrhea and syphilis are to be reported (and I do not for one second question the advisability of it), the statutes of the state should definitely mention those diseases. The ruling of the board of health is always subject to the court action; and a court uneducated in matters of medicine must take the opinion of one physician as legally as good as that of another. Therefore the ruling of boards of health is liable at any time to be nullified by a court decision. Statistics, in order to be accurate, must be complete. Many physicians imagine that they may be compelled to report a case of scarlet fever, or possibly typhoid fever; but they take it that disclosing the presence of the gonococcus or syphilis in a patient, would be betraying professional confidence. That provision should be covered by a state legislative enactment.

DR. PRINCE A. MORROW, New York: The law in New York state is mandatory that all diseases which are infectious and dangerous to the public health should be reported.

DR. HENRY B. HEMENWAY, Evanston, Ill.: That expression "infectious" must be passed on by the court. Although malaria, for example, is infectious, and we know that it is infectious, there are many physicians who deny its infectiousness to-day; and therefore if we attempted to require the reporting of malaria, we might find that the court would decide against us.

DR. J. N. HURTY, Indianapolis: Of course, there is no doubt about the desirability of reporting the malarial diseases. That they will be reported eventually I have no doubt. But to secure reports of them at present seems to me to present insurmountable difficulties. We cannot yet obtain perfect reports of those diseases that the people think should be reported. The existence of scarlet fever is sometimes hidden. Until people understand their duty to their neighbors, how can we secure the reporting of malaria?

Of course, my conviction is that it is the duty of the physician from every point of view, to report vital statistics.

One of our most prominent gynecologists, a cultivated man, educated at Harvard College, and the Harvard Medical School, contended that he should be paid for reporting a birth. That contention indicates a very serious situation, it seems to me. When the matter so particularly concerns, or may concern the material welfare, of his patient and the child, and the physician is the only man who can do it, I would say that he might just as well at a birth leave the placenta *in situ* as not to report its occurrence, because until he has attended to both matters he has not completed his work. Let him complete his work: then let him have his pay.

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## A BRIEF REPORT OF THE NEBRASKA EPIDEMIC OF POLIOMYELITIS *

H. M. McCLANAHAN, M.D.
OMAHA

This epidemic occurred during the summer of 1909. In proportion to the population it was greatly more extensive than the epidemic in New York City of 1907. My report is based on personal letters received from fifty-eight physicians, a number of whom I have seen personally. I have been greatly aided by Drs. H. W. Orr and W. H. Wilson of Lincoln, Nebraska, and hereby acknowledge my appreciation of their courtesy. Dr. Orr investigated the epidemic with a view to determining chiefly the nature and extent of the resulting paralysis. His paper was recently read before the American Orthopedic Society. Dr. Orr wrote directly to the people and received replies from 213 families, reporting on 345 cases. The total number of cases reported to him was 619. A brief summary is as follows:

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Fully recovered, 151; not reported, 195; died, 91; one arm affected, 21; one leg, 53; side, 7; both arms, 4; both legs, 61; all extremities, 24; trunk, 10; face, 4.

Dr. W. H. Wilson, state health inspector, visited the chief centers and saw many of the cases. I quote as follows from a letter received from him April 25, 1910:

There were something like 275 cases reported to this office but from what I know of the situation, having been out much over the field, I am satisfied that there must have been at least three times this number of cases and perhaps more. The death record is practically complete, inasmuch as death certificates must be filed before burial permits are issued. I find that 137 deaths are recorded in which the cause is given as poliomyelitis, spinal paralysis and cerebrospinal meningitis, but they are manifestly all belonging to the same class. Making an analysis of the first eighty cases reported I find that in seventy-two of these the duration of the disease was from one to five days, about three days being the average. In eight cases the time preceding death was from ten to fifteen days. No patient over 20 years of age. . . . . As to the patients who have completely recovered I have no data of any degree of accuracy except on eighty cases, and of these as near as I can learn 75 per cent. have completely recovered.

In my investigation the chief purpose was to determine the variety of the disease. The following points were covered in a letter of inquiry addressed to physicians:

1. Total number of cases.
2. Total number of fatal cases.
3. Clinical varieties as follows: (a) cerebral type, (b) bulbar type, (c) polyneuritic type, (d) ordinary type. (By cerebral type, I mean cases with high fever, delirium, convulsions, rigidity of neck or opisthotonos, when after one or more days these symptoms subside to be followed by paralysis; by bulbar type cases indicating paralysis in the medulla, as evidenced by disturbance chiefly in the breathing; by neuritic type, cases with a great deal of hyperesthesia and severe pains in the extremities; by ordinary type, cases beginning with fever, vomiting, diarrhea or constipation, to be followed sooner or later by paralysis.)
4. Cases of complete recovery without paralysis.
5. Parts paralyzed in cases of recovery with paralysis.
6. Age of patient.

The following-named physicians have reported to me, and I wish to acknowledge my sense of appreciation for their courtesy:

From Polk County, Drs. Shaw, Malster, Anderson, Post, Woeppel; York County, Drs. Hallett, Hylton, Shidler, Stark, Karrer, McKinley, Demeree; Dawson County, Drs. Sayer, Wengert; Custer County, Drs. Sargent, Comstock; Valley County, Drs. Bartoo, Lee; Nance County, Drs. Johnson, Eastman, Ohanerl; Merrick County, Drs. Benton, Robinson; Seward County, Dr. Doty; Webster County, Dr. Wegman; Dodge County, Drs. Davis, McDonald, Smith, Heyne; Nemaha County, Dr. Dillon; Saline County, Dr. Bentz; Phelps County, Dr. Sanders; Hitchcock County, Dr. Mellea; Douglas County, containing the cities of Omaha and South Omaha, Florence, Benson and Dundee, Drs. Gilmore, Porter, Ellis, Adams, Wigton, Rix, Rosewater, Lake, Bishop, Morrison, Jefferson, Mack, Somers, Swanson, J. C. Moore, R. C. Moore, Impey, McClanneghan, Brown, Dwyer, Loomis, Van Camp.

Reports from the counties were as follows:

| County. | Population. | Cases. |
|---|---|---|
| Polk | 12,000 | 384 |
| York | 19,000 | 130 |
| Valley | 8,000 | 90 |
| Custer | 20,000 | 82 |
| Douglas | 175,000 | 79 |
| Nance | 9,000 | 72 |
| Webster | 12,000 | 43 |
| Dawson | 13,000 | 41 |
| Seward | 16,000 | 25 |

| | | |
|---|---|---|
| Dodge | 24,000 | 17 |
| Merrick | 10,000 | 19 |
| Nahama | 16,000 | 5 |
| Otoe | 24,000 | 5 |
| Saline | 20,000 | 3 |
| Hitchcock | 5,000 | 2 |
| Colfax | 12,000 | 1 |
| Phelps | 12,000 | 1 |
| Hamilton | 14,000 | ... |
| Total cases | | 999 |

Dr. Orr in his paper gives reports from 13 other counties not included in my list, with a total of 37 cases. I am satisfied from my experience that neither Dr. Orr's report nor mine contains all of the cases that actually occurred. His report showed a total of 91 deaths. Dr. Wilson, whose report is official, gives a total of 137 deaths. The total number of deaths in my report is 61. It follows that my report does not include nearly all the fatal cases. There are several reasons for this. For instance, I saw three cases out in the state which terminated fatally, but which are not included in my report. Again, I know of instances in which the attending physician was discharged and another called in, and, the case terminating fatally, the first physician would not include this case in his list of cases.

I have personally seen 47 cases, 15 during the acute stage and 22 because of the resulting paralysis, and in taking a careful history of these cases I found that 6 patients had no physician during the acute stage, seeking medical advice only because of the resulting paralysis. Physicians in the storm-center of the disease informed me that they were satisfied that there were many cases throughout the country districts in which no physician was called. My reports concerning the resulting paralysis were so incomplete that I shall not attempt to classify them. The chief object I had in view was to determine the clinical varieties, and the reports yield the following results: cerebral type, 107; bulbar type, 86; polyneuritic, 113; ordinary, 495; unclassified, 188; total, 989.

The first case was reported in the month of March, but only 7 cases are reported from that time until July 1, and only 20 cases after November 1, four-fifths of all the cases occurring during the months of July and August. Those two months were unusually warm and dry. It is preeminently a disease of warm weather. Fifty-five per cent. of all the cases occurred in the counties of Polk and York, with a total population of 31,000 people, and the greater number of the cases occurred within an area of 20 by 24 miles. It was preeminently a disease of the rural district. A Fourth of July celebration was held in Stromsberg, Polk County, and I am told by reliable physicians that within two weeks after that the disease swept like a wave over the adjoining country. Another center in Webster County existed, with miles of intervening country without a case as far as can be ascertained. There were other centers in Nance, Valley, Custer and Dawson Counties, with considerable areas of intervening country without any reported cases. The physicians in some of these centers requested the state board of health to establish quarantine. This was done and the result seemed amply to justify this procedure. I think I can truthfully say that the physicians having the largest experience are satisfied from it that the disease is not only infectious, but contagious as well. Were there time I might recite many interesting experiences related to me.

### DIAGNOSIS

It would be strange indeed if, in the presence of an epidemic like this, mistakes in diagnosis were not made. Except for the literature of the New York epidemic there was nothing in the text-books to guide physicians or to give them any adequate conception of its symptoms or nature and the literature of that epidemic was not available to the large majority of physicians. It was called summer grip, mysterious disease, spinal paralysis, cerebrospinal meningitis and poliomyelitis. There were cases of the cerebral type that could not be differentiated from true meningitis except by lumbar puncture. This was done in a number of cases, and unfortunately one or two misleading reports were received by physicians concerning the bacteriologic findings.

So far as I can ascertain, the *Diplococcus meningitidis intracellularis* was not found in any of the cases. As the disease spread and as other cases appeared without meningitic symptoms, however, it became manifest that we were visited by an epidemic similar to that which prevailed in New York. We now know that some of these are cases of true meningitis and present symptoms similar to that disease, the only distinction being that they are not caused by the intracellular diplococcus.

### NATURE OF THE DISEASE

The report of the collective investigating committee on the New York epidemic clearly shows that we must form a new conception of this disease. We must recognize that it is a general infection, that it involves many organs in the body, including the gastro-intestinal tract, the lungs, liver and other organs; that the toxin has a peculiar affinity for the nervous system, that it may involve only a part of the spinal cord or may spread to any part of cerebrospinal axis; hence we may have meningo-encephalo-myelitis. There is a cellular infiltration, chiefly of the anterior horn of the cord and more or less degeneration of the ganglion cells. The extent of permanent paralysis will depend on the degree of degeneration. The fact that many patients having early paralysis recover completely is evidence that degeneration does not take place in all cases, and that the cell infiltration is removed by absorption with complete restoration of function. It is probable that the early weakness and paralysis are due to a toxin which has a peculiar affinity for the nerve centers, inhibiting their function. This conception of the disease will greatly aid us both in diagnosis and in treatment.

My reports show that nearly all the fatal cases were due to bulbar paralysis. By this is meant an involvement of the motor centers in the medulla leading to paralysis of respiration. My reports indicate that nearly 90 per cent. of the cases were of this type, and that nearly all of these cases died within the first three days. When bulbar symptoms occur death may ensue within a few hours. These symptoms may occur in cases that otherwise seem mild. Again there may be cases with serious cerebral symptoms without bulbar symptoms; hence with all cases we have this complication to fear. I believe it to be true, however, that bulbar symptoms seldom or never occur after the first week. This complication was to me the important lesson of our epidemic. It was my sad privilege to witness the death of one of these cases. From the first symptom indicating respiratory failure to the fatal issue was only seven hours. Several of the physicians have frankly

told me that they had been greatly shocked and surprised to have a case terminate fatally in which but a few hours before they had given a favorable prognosis.

A careful study of my report and letters written to me indicate that constipation was the rule, diarrhea the rare exception. One physician who saw eighty-six cases did not have a single case in which diarrhea was a symptom. The constipation was obstinate, sometimes requiring two or three days to secure a bowel movement. This would seem to indicate that the disease caused an inhibitory effect on the muscular coats of the bowel. Vomiting was a rare symptom. As nearly as I can gather from the reports over 80 per cent. of the patients vary in age from 2 to 10 years, the extreme limits of age being 4 months and 67 years. A patient who died at the age of 37 was the oldest one reported whose case was fatal.

The most surprising feature of the report, however, was the number of cases reported of complete recovery. I am not able to give the exact figures. Some write that after the acute symptoms had subsided the cases passed from their observation. Dr. Orr's report received directly from the parents indicates that a larger number of patients have permanent paralysis than would be indicated from my report. My personal experience with patients coming to my office leads me to believe that there are many cases of paralysis of which the attending physician has no knowledge. It is certain, however, that a large number of these patients have recovered permanently, and probably 25 per cent. would be a liberal estimate of those who are permanently paralyzed. I can not discuss the subject of treatment but close with the following suggestions:

SUGGESTIONS

This is an infectious disease.

The evidence that it is contagious is accumulating.

The only safe procedure is to treat it as we would measles or scarlet fever; namely, isolate the patient.

We should realize that it is a general disease, that it may involve any part of the nervous system, that the bulbar type is usually fatal, and that our treatment should be directed toward prompt and efficient elimination.

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ABSTRACT OF DISCUSSION

DR. C. A. ANDERSON, Stromsburg, Neb.: Poliomyelitis is an interesting subject to me, as I am from the county in Nebraska in which a larger number of cases occurred than in any other county in the state. I had 86 cases in my own practice and saw a number of others as health officer. I was the first in the state to report these cases, and believe I quarantined the first cases of poliomyelitis quarantined in the United States.

Though I have learned of earlier cases in other parts of the state, the first case I have been able to find in Polk County occurred about the middle of May, 1909, and had come from some distant part of the state. I saw the first case on May 30, and from that day to July 4, 30 cases occurred in Stromsburg and tributary country. On July 26 and 27 I saw the first 3 cases in which I discovered paralysis, and on inquiry found that the other doctors also had patients with paralysis. I at once telephoned the state health inspector, asking him to come without delay, which he kindly did. After seeing the cases we were informed that no legal provision had been made for quarantining such cases and were advised to isolate them. But this, of course, could not be enforced, nor could the impending Fourth of July celebration be averted. This celebration was well attended and a week later cases were reported from communities far and near previously free from the disease, but which had representatives at the celebration. During the following 30 days at least 115 cases occurred in the city of Stromsburg and tributary country.

On July 21 we were authorized and commanded by the State Board of Health to quarantine, and in 12 days the epidemic was well under control in our community, only 15 scattered cases occurring after that date. The epidemic reached Osceola, our neighboring town on the east, later, when suddenly 9 cases occurred there. Having profited by our experience, the affected families were at once placed in absolute quarantine, with the result that not a single additional case occurred there. The quarantine recommended by our State Board of Health, and which we carried out, was not absolute, but the same as that recommended for diphtheria, i. e., the bread winners were permitted to go about their business after taking certain precautions. The fact that the people of our community were thoroughly aroused by the ravages of the epidemic contributed much to the effectiveness of the quarantine there. In a community where the danger is not known I believe an absolute quarantine is safer.

Of the 86 cases 4 were fatal, the patients dying of bulbar paralysis on about the fourth day. Eighty-four per cent. were less than 10 years old, children 6 to 7 furnishing a larger number of cases than any other age. From 10 to 22 the susceptibility seemed to be about the same, each year of age being represented except 18 and 19. The oldest patient was 36, and died. In only one case was spinal puncture and an examination of the fluid made. The fluid was clear, but the microscopist stated that he found the *Meningococcus intracellularis*, a statement that is now known to be an unfortunate mistake. The numerous punctures done later in a neighboring county also showed clear fluid which contained no intracellular cocci.

DR. E. H. BARTLEY, Brooklyn, N. Y.: One important thing in the history of this epidemic is in reference to the period of incubation. The essayist has said it was about two weeks, and Dr. Anderson's figures make it about two weeks after the quarantine that the epidemic stopped suddenly. If they would tell us how long after the Fourth of July celebration the large crop of cases appeared, that would also assist us somewhat in determining the period of incubation.

DR. H. M. MCCLANAHAN, Omaha: I had expected to have the pathologist report the findings in eight or ten cases. It was to me a revelation. My cases were limited to forty-seven, and of the seven patients with the bulbar form, all died. Twenty-two patients came to me because of the paralysis, all of the ordinary type, one with complete paralysis of the muscles of the left side. In another case there is complete paralysis of the left side of the face. We did not find in any of the eight cases in which lumbar puncture was done the *Diplococcus intracellularis*. In three the fluid was absolutely sterile.

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# THE RÔLE OF OPHTHALMOLOGY IN PREVENTIVE MEDICINE *

HIRAM WOODS, M.D.
BALTIMORE

The rôle of ophthalmology in preventive medicine includes, it seems to me, at least three phases which may be profitably studied by the general profession: 1. Prevention of blindness from infectious diseases and accidents. 2. Prevention of eye deterioration by violation of ocular hygiene. 3. Prevention of remote lesions through recognition of early ocular symptoms of systemic disease. It is my purpose to speak briefly of each of these, bearing in mind the fact that this section has to do rather with the practical results of scientific study than with the details of the study itself.

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

OPHTHALMIA NEONATORUM

Among infectious eye troubles, the most destructive, by long odds, is ophthalmia neonatorum. The number of its victims is little short of a professional disgrace. Its cause is definitely known. While due exceptionally to infection other than gonococcic, and while differential diagnosis is important, the fact remains that clinical experience shows the preventability and curability of the disease. Credé's prophylaxis was given to the profession about thirty years ago. On account of occasional so-called "silver catarrh," it encountered some opposition. This was largely overcome by reducing the strength of the nitrate solution from 2 to 1 per cent., in which strength it seems equally effective as a preventive, while its irritating qualities are lessened. Rarely—not more than twice or thrice in a lifetime—hemorrhage from the conjunctiva is seen in infants. As the use of Credé's method became more general, this symptom of hemophilia was laid at the door of the silver salt, hemorrhages, usually fatal, from other parts of the body not receiving proper consideration.

Other preventives have been tried. Maternal disinfection has been relied on; other drugs, mercuric chlorid, potassium permanganate, and the protein silver salts, have been used in the eyes. While all have been more or less effective, the consensus of opinion puts the 1 per cent. nitrate solution at the top. When used properly, in a clean way, this solution is practically always effectual. Its routine use in maternities has almost driven this disease away. "Routine" is important, for whenever discretion has been left to a house staff, to use or not according to maternal conditions, ophthalmia has increased. Though it is always used in most maternities, and employed by many obstetricians uniformly in private practice and by many more when there is the least reason to suspect gonococcic infection, one studying statistics of blindness meets with an appalling fact; the percentage of blindness from infantile ophthalmia in schools and asylums is practically undiminished. In some places it is larger. The Maryland school will serve as an example. In 1892 children blind from this disease amounted to about 18 per cent. Now it is nearly 28. An average of 30 per cent. holds everywhere. These cases do not come from maternity hospitals or from eye hospitals, provided the cornea is clear when treatment is instituted, nor from the private practice of the careful physician. In my own state, of this 28 per cent. of all blind children, 77 per cent. were born under midwife care, the remainder under medical care. Observations in other states give similar results. Several conclusions are justified:

First, an increasing number of women in the poorer classes are applying to midwives for care during confinement. This seems directly confirmed by the investigations of Miss Crowell in New York and Chicago, and Miss Small in Baltimore. Birth registration is hard to enforce; but an estimate of 40 to 50 per cent. of midwife attendance is certainly safe. This is in spite of the ample hospital provision which our cities afford.

A second conclusion is that the large majority of midwives are ignorant and incompetent. It is necessary only to call attention to Miss Crowell's findings to prove, not only that the American midwife, white and black, is untrustworthy, but that the foreign woman, better trained in her own country, soon degenerates to the level of demand when she comes to our side.

A third conclusion, more mortifying and disgraceful than those bearing on midwives, follows from the fact that at least a considerable percentage of infantile blindness can be laid at the door of the physician. There are, it is evident, practitioners who either do not know how to prevent and treat the disease, or, if they know, fail to act on their knowledge. It is well-nigh impossible to reach these men. Medical societies and journals are strangers to them. They pursue their own dogmatic, complacent ways, and their patients take the consequences.

But the midwife problem is one which must have serious study. In many countries of Europe the midwife has not only legal restrictions but educational advantages Her activity is recognized, and the government prepares her for her work among the poor. Not so, to any degree at least, with us. We so often hear it stated that the midwife is here, and here to stay, that it must be true. That 40 or more per cent. of births are supervised by her lends confirmation. She is evidently more popular with the poorer classes than are our hospitals, maternities or relief societies which furnish free medical attention by women physicians. Yet we know that her ignorance often brings blindness to the baby and death to the mother. Preventive medicine means prevention of the effects of disease; elimination of cause, when possible.

We have recently added to our Maryland laws one regulating the practice of midwifery. It requires ability to read and write, attendance on at least five cases of confinement, under capable supervision, and demonstration to the health board of ability to attend normal labor. It requires report, and forbids treatment of infantile ophthalmia. This law, and others similar, aims at making the midwife as harmless as possible, recognizing her standing, because she is a necessity.

If that is the professional attitude toward her, it seems to me that we must go the full length of the situation, and provide, as is done abroad, for education of the midwife up to her legal privileges. She has a unique place. Her patronage can never rise above a certain social line, and persons below this line do not know how to take care of themselves. Naturally they become, in one sense or another, public charges. I do not mean that they must be supported; but I do mean that their ignorance leads to results from which intelligent men and women must save them. How and by what means the midwife is to obtain educational facilities I do not, at this time, at least, stop to discuss. But, on the doctrine of her necessity in American life, it is worth thoughtful discussion, and such a group of men as make up this Section will soon have to grapple with it.

I am going to suggest, however, a side attack on the midwife problem. It is popular education of the persons who employ the midwife. We have in the Maryland Medical and Chirurgical Faculty a bureau of public instruction. Medical men and women go, at the request of philanthropic societies, among the poor and tell them about prevention. Last fall I addressed an audience of some sixty or more pregnant women under the auspices of a branch of the Women's Christian Association. I afterwards learned that a number of my audience canceled midwife retention, and entered hospitals. I have urged this popular education on our social workers in Baltimore, and mention it here only as suggesting a way of enlightening the ignorant poor who are quick enough to follow advice when they are convinced of its disinterestedness. They will not take such advice from physicians in this spirit.

The fight against ophthalmia neonatorum is the most encouraging preventive undertaking in the rôle of oph-

thalmology. Many states have laws compelling the report of midwife cases, and a few convictions impress midwives with the necessity of getting the babies into proper hands at once. Such has been our experience in Baltimore, where some of us have reported neglected cases and secured convictions. In New York state the Board of Health furnishes free of charge prophylactic sterile silver nitrate solution to those willing to use it. A large number of physicians and the better class of midwives are doing so. The Sage Foundation has taken up the fight, and is ready to furnish money and help promote knowledge where it is needed. In several states there are associations of professional and lay men and women for prevention of blindness. The American Medical Association has a special committee in its Section on Ophthalmology, of which committee Dr. Lewis of Buffalo is Chairman; and there are corresponding members in each state.

There is still needed the same sort of awakening to this disease which has come to the profession in the fight against tuberculosis. Why the mere facts in the case fail to impress many physicians is hard to say; but they do not. I heard a leading county practitioner say that he considered putting nitrate solution into the eyes of a new-born baby, "just because the father had had gonorrhea," as almost criminal. One step might be taken in impressing such men if ophthalmia neonatorum were put in the list of diseases to be reported. It could be easily enforced after a little; for if a child lost an eye the parents would almost certainly take him or her to an oculist, and thus failure to report would be brought home to the first attendant. Such a lesson would induce a man to post himself on treatment and prevention.

### ACCIDENTS

Accidents as a cause of blindness have been gone over so thoroughly that I shall hardly more than allude to them. In the line of prevention, however, a sane and safe method of observing Fourth of July merits professional activity. Since passage of an ordinance forbidding the use of fireworks within the city limits, such accidents as we saw in abundance years ago in Baltimore, are now almost unknown. Dr. Robert L. Randolph deserves special mention for activity in this work. The comparison between cities with and without such regulations, as produced by *Collier's Weekly* a year ago, shows what can be done if medical influence is used. Antiseptic treatment of eye wounds from industrial accidents has saved many eyes whose sight was not entirely destroyed, though in former years these eyes would have been removed without hesitation. Sympathetic ophthalmia is now a rare disease. Personally I have seen but one case in a number of years; yet risks which would have been formerly considered unjustifiable, are now taken to save the injured eye.

The principles of treatment are, removal of foreign bodies, if present and removable, rest, cleanliness, cold, and meeting complications with appropriate treatment. Some surgeons claim that hexamethylenamin is highly useful in such cases, and a limited experience with it leads me to agree with them. The most important thing is to get the patient under rigid antiseptic treatment early.

It would be interesting to review, if time permitted, various protective devices now being introduced in factories to safeguard workmen from flying bits of metal, broken machinery, etc. This phase of the prevention of blindness, however, belongs rather to the industrial than the medical side.

### SCHOOL HYGIENE

There is a rôle of preventive medicine in ophthalmology which has received considerable attention from some quarters and has been sadly neglected in others. I allude to school hygiene. The systematic examination of children's eyes for visual acuity often discovers for the first time that refraction is abnormal and enables the child to start school life safe-guarded. General recognition of ocular origin of headaches, etc., does more in the same direction. Recognition that myopia, certainly the progressive type, is a diseased condition, and that it usually comes from neglected astigmatism, is a long stride in saving children from damaged eyes and the numberless remote disturbances which come from the eyes.

Of no less importance than examination of pupils' eyes is school hygiene in the sense of proper lighting of rooms—direction, intensity, etc.; adjustable desks, size of print, character of paper, etc. In such a paper as this it is hardly possible or proper to consider these matters in detail. Yet, with increasing popular interest in medical matters and greater appreciation of hygienic principles, such things demand attention from the physician, because his advice will be sought.

Two phases of school hygiene may be specially mentioned. The adjustable desk, as is known, can be adjusted to the child's measurement. Its use does away with the haphazard method of putting a child in the desk which most nearly fits. It secures comfortable seating, with the body properly supported both in the upright and forward positions, enables the child to bend over the desk, in writing, without elevating one shoulder above the other, and with the page at a proper distance for sustained and comfortable eye work. These desks are not much more expensive than the old-fashioned stationary affairs. They are in use in most of the best private and a few of the public schools. Their universal adoption would, I believe, be most helpful in preventing ocular discomfort and disorders.

Every year an oculist sees a few children with these conditions: vision is below normal, one-half to one-tenth; the child sees well enough to be self-reliant, but study is impossible; either refraction error is absent or its correction does not improve vision; the cause of defective sight is sometimes undiscoverable, apparently a congenital defect. Again, corneal opacities, antipolar cataracts, old superficial chorioidal scars explain the partial blindness. What can be done to educate these defectives? If they try to keep up in a curriculum arranged for children with normal visual acuity, not only does suffering result, but each year sees a little less vision at 20 feet, a little nearer approach of print in order to secure a larger retinal image. In other words, school life is damaging sight.

I, like other oculists, have seen such cases go on to practical, if not absolute blindness. We forbid eye-work, but the prohibition means enforced idleness while the mind is active. A few such children consent to be read to, but the majority rebel, and little by little parents cease the effort. Then either eye-work is done clandestinally, or effort to get education is abandoned. So far as I know, there is no provision made for such children in our educational system. With most of them it is either nothing or the blind school. There has been some recognition of this class in England, and a few men have, in individual cases, done something here.

We need, it seems to me, a midway or modified curriculum in our school system. It should include such studies only as are really necessary for a fair common school education. Maps, diagrams, books, etc., should be large enough in outline or print for the defective to see without effort. I have been able to find a few such maps and books for such children, and the effect of eye-work, under easy conditions, on the eyes themselves, has been surprising and gratifying. Visual acuity has really increased during a period of years.

The principle holds good, too, in a class of squint cases which relapse after operation because the squinting eye is below its fellow in visual acuity and so does not work: that is, its comparatively indistinct retinal image makes no impression on the psychic side of seeing. By selecting type which the eye can see, and forcing work on such type, with the good eye excluded for a little time each day, one is often rewarded by positive increase in vision, sometimes to a point where binocular sight is possible. I have developed such eyes from one-tenth or less to nearly normal.

But it is chiefly to the school idea that I wish to direct attention. Ophthalmology here has a rôle in preventive medicine of both physical and economic value; for not only is such sight as the child has, preserved or improved, but the child himself is made a more or less productive social factor. He will not, with visual acuity assumed, take kindly to instruction designed for the blind, but he will respond to the special efforts made for him. As a class, he merits more attention than he gets.

### EYE LESIONS AND SYSTEMIC DISEASE

In conclusion, I want to speak of a rôle in preventive medicine which ophthalmology ought to occupy more than it does. I allude to functional or organic ocular disorders as symptomatic of systemic disease. To the oculist it is important because the best possible work in his own special line will be nullified unless he recognizes the symptomatic meaning of the trouble bringing his patient to him. To the patient it is important, because even if the oculist relieves symptoms without recognition of cause, relapse is inevitable. To the practitioner it is important because the eye, properly studied, often gives indications not gathered otherwise.

There are many ways in which this rôle may be illustrated. How often does a patient go from one oculist to another—to say nothing of the all-sufficient examining optician, or optometrist, as he now calls himself—vainly seeking relief from asthenopia? The mere fact that a half dozen conscientious and capable men have failed should indicate that there is something besides ocular error. This something is often hard to find. Its search demands cooperation of specialist, internist, physiologic chemist, etc. I have traced these persistent functional eye disorders to anemia, incipient and unsuspected nephritis, intestinal auto-intoxication, functional and organic menstrual troubles, supposedly cured or unsuspected hereditary syphilis, etc. Again, the oculist sees interstitial keratitis, or a frank iritis of alleged rheumatic origin; or else it is clearly a secondary syphilitic manifestation. His duty is not done when the eye lesion is cured. Only when he has put the patient where he can receive the systemic review or treatment indicated by the eye symptom can the oculist release himself from responsibility.

On the other hand, the oculist is now, the country over, fighting the so-called optometrist in his effort to secure by legislation a quasi-professional standing. He is doing this disagreeable work because he knows that not only is the eye itself often injured by delay of proper treatment, while the optician is vainly trying to sell glasses that will cure ocular lesions, but that the symptoms of eyestrain which take the individual to the optician often mean remote and serious troubles. The rôle of ophthalmology in preventive medicine means cooperative medicine. It means that if we view the eye from the standpoint of its own function, this function is often affected by conditions beyond the oculist's power to diagnose or cure; that if ametropia be present, the physician may work in vain to relieve remote symptoms till the oculist helps him; that if the oculist appreciates the meaning of persistent functional disorders, a rigid pupil, seemingly unimportant muscular paresis, he may save his patient from dreadful consequences by asking his brother internist to aid him; that the problem of saving sight is not one which concerns the oculist alone, but is one which demands honest introspection from the physician and effort to educate his patients in the views which medical progress has taught us.

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### ABSTRACT OF DISCUSSION

DR. LEARTUS CONNOR, Detroit: Dr. Woods has stated with great clearness the relation of ophthalmology to preventive medicine. But in order to make this relation effective it is necessary that every physician have a definite increase in his working knowledge of ophthalmology. What this shall be and how obtained, is the subject of my remarks. The Section on Ophthalmology has decided that this shall be "a mastery of infectious diseases of the eye" and its "simple refractive defects." Because of the fact that existing ophthalmologists are unable to meet the needs of the one hundred and eighty millions of human eyes in the United States that need refracting, it is proposed that the entire one hundred and thirty thousand physicians be trained to manage simple cases, leaving for specialists the more complicated cases. Using the illustration of an army, we now have the officers, but not the soldiers; it is proposed to recruit the soldiers, and so to organize an effective army for protecting all the people from ocular diseases and disabilities.

If the entire profession is to be trained for the intelligent management of the simple eye disorders, the medical colleges must train them. To encourage them to make such changes as are necessary to ensure such training, it has been found practicable to persuade the state registration boards to require it for license to practice. A year ago the Section on Ophthalmology appointed a committee to promote such persuasion. It reports that four states now make such requirements, viz., Michigan, Utah, Vermont and Nebraska; that the House of Delegates of the American Medical Association, the American Academy of Medicine and the Federation of State Licensing and Examining Boards approve it.

Thus in one department of medicine—ophthalmology—experts have determined what every physician can master and actually practice, without interference with other practice, and so supplement the limitations of specialists and enlarge their own field and supply educated physicians adequate for the ophthalmic needs of all the people, under actual conditions. Farther, it is promoting the actual equipment of every doctor with the skill needful for him to do his part in the service of the people. It is believed that thus the service of ophthalmology in preventive medicine will be infinitely enhanced, just as an army of one hundred and thirty-five thousand is more effective than one of three thousand, and one with both soldiers and officers stronger than one with only officers.

DR. PRINCE A. MORROW, New York: I believe that the gonococcus is responsible for 90 to 95 per cent. (a great many authority say practically all) of the blindness of the newborn. We have the testimony of ophthalmologists that the gonococcus is responsible for at least 25 per cent. of all blindness. Now, I think that in all these discussions on the

prevention of blindness, as far as I have followed them, in the literature put out by the committee on the treatment of blindness, such as "Why Children Need Not Be Born Blind," there is no reference to the education of the public as to the nature and communicable mode of the infection that causes blindness; that is absolutely covered up and concealed; in fact, the entire responsibility is thrown on the shoulders of the physicians and midwives. The only education that the committee attempts to give is the education of the public to an appreciation of the value of the Credé method. As long as the public is ignorant, and kept ignorant, of the nature of the infection that causes blindness, I don't believe that ophthalmia neonatorum will ever be effectively checked. Now, I am a believer in the value of the Credé method; it is the best method in the present state of our knowledge for correcting the effects of this cause; but I regard it as an anachronism in the present day of advanced medical science to endeavor to correct the effects of a cause and ignore the cause itself.

Now, how do we get at this? We are to educate the public, but we cannot do it individually; we cannot say to a mother that her child has been blinded by an infection received from its father; but we can educate the public collectively. The medical secret does not apply to the collectivity, it applies only to the individual. I believe that it is the greatest duty, the most urgent obligation on the part of the medical profession of the present day, to enlighten the public in regard not only to this infection, but to all of the infections that come from venereal diseases.

DR. SENECA EGBERT, Philadelphia: In regard to the teaching in the medical schools, I would like to say that, as a matter of fact, some of the students in some of the schools are getting this information and instruction, not only didactically, but also by actual practical work in the ward class. This year I can tell you of a class, numbering eighty at least, every one of whom had practical work in ophthalmoscopy, as well as work with other ophthalmic patients; and, what is more, those men got in final examination a question on refraction. I might say, too, in regard to the examination on ophthalmology, the question on the treatment of ophthalmia neonatorum has been so common in the past years that the students always look for it; and if they don't know anything else about the eye, they do know Credé's method and how to treat new-born infants. That is being done not only in our own school but in other schools throughout the country.

DR. HENRY B. HEMENWAY, Evanston, Ill.: The Chicago Department of Public Health has been conducting, for a short time, what they call a postgraduate school of instruction for midwives. A series of questions is sent out to the midwives, and they are asked to reply to them, and then they are invited to come in and discuss some of those problems with one of the department members. One of the objects of this instruction is this very matter of the prevention of blindness of children.

DR. W. FORREST DUTTON, Carnegie, Pa.: There are three problems presented by Dr. Woods' paper: that of midwife, that of ophthalmia neonatorum, and that of registration of births. I think we should, in the first place, educate the laity to legislate. In Pennsylvania we practically have no midwife law at all; and of those that attempt midwifery, we only have one of those licensed out of about the ninety-nine of those that do the work. I will venture to say that 25 per cent. of the ophthalmia neonatorum is due to the negligence of those practicing midwifery who have no right to practice it at all. Therefore, the blame should be placed where it justly belongs—on the midwife and the laws and not on the physician.

That presents another problem of the registration of births. It may be said that we get back to that when the death certificate is brought in. Well, if those children are allowed to go on until four or five years of age without registration they don't have an opportunity to get back at a midwife. If they would get at the midwife, make the doctor, midwife and parents equally responsible for the registration, I think a great many cases of blindness from these conditions could be avoided. It is legislation, instead of education, in a great many places, that we want. We must educate the legislators to know that we want this, before we educate the classes up to the standard in preventive measures.

DR. HIRAM WOODS, Baltimore: I agree with Dr. Morrow's general criticisms that an allusion to popular education along the lines of sex hygiene would have made my paper more complete. It was not forgotten, but it is impossible to put in a short paper all one may wish. In the general lectures delivered in Baltimore, under the auspices of the medical and chirurgical faculty, the matter is emphasized. I agree with Dr. Egbert, so far as my experience goes. If my students get away from instruction on eye diseases without realizing that between the eye and the sex problem there is close connection, without appreciating the fallacy of one standard of morality and decency for men and another for women, it is not because such instruction is not given them.

Dr. Morrow claims that advice of ophthalmologists and obstetricians (that Credé's method be general) necessitates the logical deduction that every woman is a possible source of gonococcic infection. The thousands of babies who do not have ophthalmia is sufficient proof of the absurdity of such deduction. If statements from the father about his previous life can be relied on, an eye prophylactic can be safely omitted. But, with different standards for the sexes, we must recognize the possibility of undiagnosticable gonococcic lesion. And responsibility for risking the baby's eyes rests on the medical attendant. How often does the average practitioner ever think of latent gonococcic infection in this light? After possibly two or three children escape, a baby develops ophthalmia. Recent infection in either parent is excluded. What does it mean? It means that an old, forgotten infection was a source of danger to the baby's eyes. In view of the harmlessness of the prophylactic, it is believed that the moral effect or influence of general use of prophylaxis would induce men, who now do not think of it, to use it and thus save many eyes now sacrificed. By noting gross lesions in the mother, the child's danger cannot by any means be determined.

There are physicians not belonging to medical societies, not reading journals, dogmatic, self-satisfied men, who seem beyond reach of new thoughts. They do not know, and the problem is, how to reach them. "There are others" outside of the medical profession, that is so. Post-partum infection, for instance, is most important. When a baby develops ophthalmia on the third or fourth day, you attribute it to maternal infection. How about those that come along later? I recently saw a baby blind in both eyes, the disease having appeared on the twelfth day. There was a dirty nurse, or dirty something, that blinded this child. Here is another problem in midwife training or public medical education. Obstetricians and ophthalmologists have begun their work on the midwife and careless doctor because they are the most conspicuous offenders, and most easily reached. No branch of preventive medicine can live to itself; but in practical, every-day work we must do what we can where we can. I fear it will be a long time before sex hygiene is so generally understood and acted on as to save babies' eyes. In the meantime, the indifferent medical man and midwife should be regulated.

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## METABOLISM AND MOUTH-DISEASE*

HENRY R. HARROWER, M.D.
CHICAGO

Since there is a very close relationship between the functions of the various organs of the body, it is not unreasonable to suppose that disorganization in one part will be accompanied or followed by disturbances elsewhere. From a study of conditions as they are to-day in both medicine and dentistry, however, it would seem that this important fact is not as fully appreciated as might be expected.

* Read in the Section on Stomatology of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

It is generally believed that certain more or less intractable diseases of the mouth or its contents are, to a greater or less degree, either accompanied by or associated with changes in the normal metabolic functions of the body. In spite of this comparatively few physicians are stimulated to look carefully into the mouth when evident errors of the metabolism are known to be present; nor do our dental confrères investigate the metabolism of those of their patients who are suffering from the all-too-common and intractable mouth-diseases.

This is not as it should be, for any local manifestation of disturbed function should serve as a reminder that a thorough investigation is not only necessary but imperative. This is just as true of mouth diseases as of skin eruptions, joint difficulties or gastro-enteric disorders. All too often Nature's glaring sign-posts are ignored.

Without a doubt there is a very close relationship between the condition of the buccal mucosa, the gums and teeth, as well as the tongue, and the blood which nourishes them. From time immemorial the condition of the tongue in disease has been used as an important diagnostic sign, and the study of this is given a prominent place in the text-books and current medical literature. For this reason I give it merely passing mention here.

It might be well here to quote a few lines from a valuable editorial entitled "Gingivitis in Diabetes" printed in a recent issue of THE JOURNAL:[1] "The importance of mouth symptoms in the acute infections, such as scarlet fever, diphtheria and measles, is recognized. It is less generally known, however, that in many constitutional conditions the mouth secretions and the mucous membranes covering the gums, cheeks, tongue, etc., furnish early and positive data for diagnosis.

"It becomes a matter of extreme importance, therefore, that the general practitioner shall examine the mouths of all patients, taking careful note of the mucous membrane of the cheeks, beneath the tongue, on the tongue itself, the roof of the mouth, and especially the gums."

The work of a number of broad-minded investigators, among whom the esteemed secretary of this Section, Dr. Eugene S. Talbot, stands preeminent, has called the attention of both the medical and dental professions to the relationship between pyorrhea alveolaris and certain blood dyscrasias.[2] This subject is of paramount importance and one to which much more attention should be paid. Here we have a vital factor in the solution of a multitude of difficulties, not merely pyorrhea alone, nor, for that matter, mouth diseases *per se*, but of a long list of common and uncommon conditions which embrace almost all the diseases known to medicine. It is a fact that as a profession we have not yet fully grasped the meaning of the Biblical statement, "The blood is the life." I do not mean by this that we do not appreciate the fact that life is dependent on the blood and its healthy condition, but the fact that in the majority of cases disease is due to toxic wastes which are present in the blood-stream and which unquestionably markedly lower its disease-resisting powers.

These poisons are not all of them sufficiently well known to have been isolated and named, but their frequent presence and easily demonstrable untoward effects are apparent to all that take the trouble to look for them.

Principal among these disease-producing toxins are certain acid substances which have been demonstrated to be closely related to indican and other products of intestinal putrefaction. Just what these substances are remains to be proved, but that they are acid in reaction and that their baneful influence is evident in the mouth as well as throughout the whole system is very quickly and easily proved.

Our methods of analyzing the blood and estimating its alkalinity are altogether too complicated for general use. In their place the examination of the urine has been found to be at once convenient, quick and easy; and the results obtained from such examinations will be found at times to be even startling. Probably the one factor obtained by the careful analysis of the urine which in most cases overtops its fellows is the acid index, and, strange to say, hardly more than a mention of it and the method of its estimation is to be found even in the most recent text-books.

Let us for a moment consider the question of the urine analysis and the relations of some of the findings. The urine is usually acid in reaction and the average normal acidity ranges from 30 to 40 degrees (each degree represents the amount of decinormal soda solution required exactly to neutralize 100 c.c. of urine). This acidity, we are told, is due to certain acid salts, principal among which is the acid phosphate of soda. We learn from the text-books that the urinary acidity is very difficult to accurately estimate because of the trouble in securing an indicator which will be responsive to all the various acid salts, and probably for this reason the study of this most important finding has been largely passed over.

Phenolphthalein is the most satisfactory indicator and is used by the majority of investigators. The test is simplicity itself and is fully as accurate as many of the well-known and widely-used tests, as for example, the albumin tests of Esbach or Purdy, or the Doremus urea test. The acidity of the urine should always be determined from a portion of a complete twenty-four-hour specimen, and care should be taken to prevent, as far as possible, alkaline decomposition of the urine. Either a burette or my acidimeter[3] may be used. The latter is far more convenient for the physician or dentist in his office, while the former is probably better in routine laboratory work where large numbers of specimens are being handled.

In a paper[4] published last June I called attention to the frequency with which excessively acid urine accompanied indicanuria and a marked dimunition in the amount of urinary solids passed. A series of 250 analyses was mentioned in this paper. These findings, augmented by much further work along this line both by myself and several interested friends, was reported in a paper[5] read at the annual meeting of the Illinois State Medical Society held last month.

From my findings it would seem, to me at least, that we have conclusive evidence that in the study of the urinary acidity we have something of more than ordinary importance. The relation of this syndrome of findings—acidemia evidenced by a hyperacid urine, intestinal toxemia by indicanuria, and decreased metabolic activity by the frequent low urea index and general

1. Editorial, Gingivitis in Diabetes, THE JOURNAL, A. M. A., May 7, 1910, p. 1548.
2. Talbot, E. S.: Med. Rec., New York, 1907, lxxi, 895; Dental Cosmos, 1909, No. 2.
3. Harrower, H. R.: New York Med. Jour., 1909, lxxxix, 1, 24.
4. Harrower, H. R.: Med. Rec., New York, 1909, lxxv, 966.
5. Harrower, H. R.: The Clinical Significance and Relations of the Urinary Acidity, read at the 1910 meeting of the Illinois State Medical Society, Danville. Not yet published

reduction in the total solids—to mouth-disease, is quickly found. It is safe to say that in a majority of patients suffering from pyorrhea are acidemics, and the most conclusive feature of this work is that therapeutic measures calculated to reduce the acidemia and eliminate the toxemia have a decidedly beneficial effect on the pyorrhea.

Many patients have been examined by me personally. Dr. Talbot has made hundreds of examinations and several others have by their work proved absolutely that there is decided and close connection between disturbed metabolism and mouth-disease.

I might go further and discuss the relations of the metabolism as evidenced by the urinary findings to diseases of the buccal mucosa, the pharynx and the tonsils, but this is a subject far too broad to be touched on as briefly as would be necessary here. I will close by relating a short but interesting case which was brought to my attention by Dr. A. H. Hoy. When he was visiting in Seattle last summer he was invited to see a little girl suffering from a membranous condition of the pharynx which seemed to be growing progressively worse in spite of heroic doses of diphtheria antitoxin, swabbings with silver nitrate and other antiseptics and the best treatment that one of the leading specialists could afford. Dr. Hoy asked if the urine had been examined. It had not. He then asked for permission to make an immediate examination of a specimen passed in the office. The acidimeter read 180 degrees. A twenty-four-hour specimen was saved, and the next afternoon was tested, showing practically the same degree of acidity.

To make a long story short, the child was treated with alkalies and within a few days the whole condition had cleared up and no evidence of the affection was to be seen save a marked hyperemia of the pharyngeal walls.

It is hoped that a wide-spread study of the relations between the disturbances of metabolism and mouth affections will shortly be inaugurated among the rank and file of the professions, and that the dentists as well as the doctors will come to see the important influence that the hyperacid state plays in disease causation in general and mouth disorders in particular.

72 Madison Street.

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## ABSTRACT OF DISCUSSION

DR. EUGENE S. TALBOT, Chicago: For a number of years Dr. Harrower has been making a specialty of this line of work. There is a great amount of suffering among our dental patients. Patients consult stomatologists to have operations performed when they are suffering pain in other parts of the body. I could recall many cases similar to that Dr. Harrower has reported in which by treating interstitial gingivitis I have been able to clear up other conditions of the body from which the patients have suffered for many years. These patients are walking about, yet they are ill. They are not ill so far as the general practitioner is concerned. He must find some lesion—some condition for which they must stay at home or in bed before taking treatment. There is no specialty of medicine wherein prophylaxis is more valuable than in dentistry. If we only knew and understood the mouth symptoms we could ward off disease in many instances. I have under way a series of experiments that are not completed, and I will give here a short report of them to show how these conditions—the urinary acidity and the indican will affect the tissues of the body.

For the past five years I have been making these experiments on seven male patients over 45 years of age who have interstitial gingivitis to a marked degree. All are fleshy, weighing from 172 to 223 pounds. These patients all have painful micturition. They have been under my personal supervision all the time. All are suffering with acidemia and indicanuria. Four are high livers; three enjoy home life; five at times have urinary acidity of from 82 to 112 degrees; the other two do not exceed 60 degrees; all have abundant indican. These men are always about their business affairs. At times all suffering more or less with rheumatic neurotic pain, headaches, drowsiness, constipation, indigestion, gases in both stomach and bowels. These patients were experimented with in different ways. All were refused meat for a given time; all were refused acids and alcohols in all forms. Sodium bicarbonate was given in doses of from 5 to 20 grains 3 times a day one-half hour after meals until the acidity was reduced to below 35 degrees; from 30 to 40 degrees being normal. All patients were put on buttermilk. In four, the indican was reduced to a minimum and the pain subsided. In three indican remained in the urine. In these latter the buttermilk was withdrawn and intestinal antiseptics given. The indican was reduced by destroying the germs in the intestines. Meat was given for a period of a month or two as the case might be and the urinalysis continued. Painful micturition returned. The experiments showed when the acidity was high and there was abundant indican, painful and frequent micturition occurred. After the urinary acidity was reduced, the pain continued; the reduction of indican in the urine, however, caused the pain to cease and the frequency to lessen. It was also found that the interstitial gingivitis could be more readily reduced and a permanency secured in not only all these patients but in others who were not under special study. It would seem that the decomposition of proteid substances in the intestines and bodily waste do not when alone cause the development of indican but by combination with intestinal germs which are not associated with nitrogenous substances to any extent, and which cannot be destroyed by the lactic acid of buttermilk. One thing is certain, indican and a high urinary acidity act as irritants in the blood stream, and the alveolar process and dental pulp, which are end-organs, are directly and quickly involved.

DR. GEORGE V. I. BROWN, Milwaukee: Dr. E. C. Kirk of Philadelphia has done some interesting work recently. It is evident, from the paper just read, that accompanying intestinal putrefaction and other similar conditions, there is a general acidosis which affects the mucous membrane of the mouth in common with other parts. Buccal acidity may also be due to results of local fermentation. We have known for some time that dental caries is fostered in its incipiency by the formation of gelatinous plaques. No one, I believe, had satisfactorily shown just how they were formed until it occurred to Dr. Kirk to demonstrate that in the presence of lactic acid the mucin of the saliva is precipitated; he thus easily accounted for these plaques. In the same general way acidosis favors precipitation of mucin; it coats itself along the tongue and the mucous membrane of the cheeks, throat and other parts. Micro-organisms stick to it as flies stick to fly-paper. This explains in a perfectly rational way many of the oral symptoms which have been so long recognized as pathognomonic of many diseases. Dr. Kirk has finally brought this subject to a point at which all the results of the labor Dr. Talbot and others have expended in developing an understanding of the constitutional aspect of buccal disease, and that of Dr. Williams, Fletcher and others who have been investigating along certain other pathologic divisions, may be brought to a focus. The rationale of tonsillitis, pharnygitis and other allied conditions is easily comprehended when one remembers that the tonsillar crypts are filled with this mucin and the micro-organisms thus protected are permitted to multiply under most favorable conditions.

DR. HENRY O. HARROWER, Chicago: Some day when the dental and medical professions are more thoroughly stimulated the discussion of this subject will be much more eager. Dr. Talbot speaks of three patients in whom the indican seemed to remain. It has been proved conclusively that there is a close relation between prolapse of the abdominal viscera and indicanuria, and I would suggest that if Dr. Talbot would look into these three cases, he would find the patients "pot-

bellied," and that if the abdominal contents were held in place the indicanuria would eventually disappear. He also referred to frequent and painful micturition. There is more to this than we think. This condition of hyperacidity or systemic acidemia is not only irritating to the kidneys but also to the urinary passages. I found in 25 per cent. of my first 250 cases that hyaline casts were present. Now hyaline casts are mucin, I believe; at all events, they are evidence of renal irritation, and it is not unreasonable to suppose that a condition which will cause the temporary presence of casts may be responsible for permanent kidney disorganization. I am not a crank on alveolitis, nor do I consider this condition of acidemia the sole cause of pyorrhea. Far from it. Unquestionably, local conditions play an important part and the presence of the acids of fermentation in the mouth have a greater bearing, perhaps, than the general condition.

"Acidemia" is the proper word to use in this connection. "Acidosis" is the old word, and Dr. Talbot still uses it. Acidosis is a condition referable in most cases to diabetes, or which only occurs when oxybutyric acid or its congeners are present; it may also be found after anesthesia; but the condition I refer to is properly called "acidemia."

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## THE PRESENT STATUS OF ANTITYPHOID INOCULATION *

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Antityphoid inoculation has been very thoroughly studied since 1896, when Pfeiffer did the pioneer work in it. Wright placed the method on a firm basis by his inoculations in the British army, both in India and during the Boer War; and since then there have been many contributions to the subject, especially by Leishman, whose work has helped greatly to bring the subject up to date, as has also the work of Major Russell of the United States Army. From these investigators I quote freely. Some of the later statistics are those of Leishman. These cover a period of three and a half years, to June, 1908. Of 5,473 soldiers vaccinated against the disease, only 21 took it, and 2 died; in 6,610 soldiers under practically the same conditions of life and surroundings, there were 187 cases, and 26 deaths. That is, there were 3.8 cases per thousand among the vaccinated, and 28.3 cases per thousand among the unvaccinated. The experience of the German army in southwest Africa has also been very satisfactory, the number of cases in their troops being only half as many among the protected as among the unprotected, while the death-rate was three times greater among those not protected by inoculation. At Peshawur, in India, Colonel Skinner, R. A. M. C., states that an actual epidemic of typhoid fever was cut short by inoculating 70 per cent. of the command, in addition to methods of sanitation.

These, with other figures, have proven to us that it has been so successful in reducing not only the death-rate but also the number of cases of typhoid fever, that our army is now using it and advocating its use. Not only does it reduce the number of cases, but when a case does appear in a patient who has been inoculated (which is rare, however), the course of the disease is much milder. The figures obtained from Major Russell of the U. S. Army, show that up to about June 1, 8,510 people have been inoculated by U. S. Army medical officers, and that there have been but few severe reactions to the inoculation. No bad results from it have been heard of, and the protection given by the inoculation has been very well marked, since there has not been a single case of typhoid in any one whose vaccination was completed; and yet there has been in the army at large, among the unprotected, considerably over 200 cases in the same period of time.

Now this is a very important fact, and certainly proves something; for it must be remembered that these inoculations have been given 8,510 people in 102 different army posts and localities, under entirely different surroundings, conditions of sanitation and conditions of exposure, and many of these must have been exposed to the disease more or less, located, as they are, near different large and small cities, from the northwest to the southeast of the United States. At Toledo, Ohio, Dr. Willard J. Stone has been using antityphoid inoculations for the past two years, especially with the idea of producing immunity among physicians and nurses; and he is firmly convinced of their efficacy, and is continuing their use. But I regret to state that their use for such purpose does not seem to be general, as I think it should be, among medical men in that part of the country, nor does it seem to be general in the large cities—as New York or Philadelphia—so far as I can find out, though in Boston more seems to have been done in the way, as you will see.

Dr. Stone has recently reported the successful treatment of a typhoid carrier by vaccine; and this is a great advance, for in his case the bacilli disappeared completely from the urine after six inoculations. Now if we can cure the carriers, then we are doing something, and my remarks in the latter part of this paper are even more important as showing that we need not be so afraid of the carrier. Dr. Stone, who has done a great deal of work in this line is very much in favor of it and states that he believes it offers more chance of cure of carriers than any other known method. This data has but recently come to me, and it should be considered carefully. Many of the individuals inoculated in the series just spoken of have shown, one month after the third inoculation, agglutinative values in dilutions as high as 1 to 500, so you can see this is good corroborative evidence.

During the past year at the Massachusetts General Hospital, there was carried on a series of inoculations under the direction of Spooner. He employed as a test of his results, not only the diminished amount of fever among the inoculated, but also a determination of the immune substance in the blood, using the agglutination test to do so. His results were so encouraging in his first series that he called for volunteers among the nurses and ward attendants, determined to make an effort to stamp out typhoid among the hospital attendants. A large number volunteered. Spooner inoculated nearly one hundred people to January, 1910, made a careful study of their inoculations, and had not a single bad result and only a few severe reactions. Though the reactions among the nurses as a rule were almost nothing, and the suffering and inconvenience among the majority almost *nil*, they all said they would have taken the inoculation anyway, with the hope of the immunity it held forth. This is a matter of considerable importance, because one of the things that hold people back from taking antityphoid inoculation is that they think they are going to suffer a great deal and have a very sore arm, as sometimes occurs in smallpox vaccination; but the fact that in the army we have now vaccinated over

* A lecture delivered to the officers at the camp of instruction, combined maneuvers, Chickamauga Park, Georgia, July 15 and 27, 1910. Published by authority of the Surgeon-General.

8,500 people is surely sufficient evidence that the procedure is harmless, and when I have shown that none of them has developed typhoid fever, while living all over the United States, even the most skeptical person ought to be convinced of the great value of these inoculations. And now the most important fact of all in reference to this last series of cases is that Spooner has lately written that this is the first year that no typhoid fever has originated in the Massachusetts General Hospital. Now it would seem, and I believe, that we can eradicate typhoid fever as it occurs among the nurses and attendants of all institutions. Think what a great thing that would be!

### PREPARATION OF VACCINE AND METHOD OF USE

The therapeutic object to be desired in these inoculations, if we may call it such, is the production of specific antibodies which will antagonize and destroy the typhoid bacillus; and to place the patient as nearly as possible in the condition of one who has had typhoid fever. This is the object expressed in few and simple terms. I shall not attempt a scientific discussion of this part of the subject, as that is foreign to my title. I need hardly discuss here the method of preparation of the vaccine, but suffice it to say that the vaccine is taken from a typical typhoid culture which is grown on agar slants for twenty hours, and is then washed off into a small quantity of normal saline solution. It is then tested for purity, placed in sealed tubes and the bacteria killed by heat at 60 C. for one hour, ¼ of one per cent. of trikresol is added as a safeguard. The vaccine we use in the army is administered to at least two animals before being used on human beings, and thus the liability of contamination is very slight. Castellani finds that he can produce a higher degree of immunity by using live typhoid vaccines, prepared by a method of his own, which consists of heating non-virulent broth cultures at 50 C. He says that the method is free from danger. With this method we have had no experience, so I merely mention it. There are other methods spoken of in the various reviews on the subject, but the method as described here seems at present to suffice.

The site of the inoculation is the arm at the insertion of the deltoid muscle, the dose to be given subcutaneously, and not into the muscle or into the skin. The arm should be cleaned as for any other operation. After the vaccine has been injected, it is well to disinfect the needle puncture by touching it with a minute quantity of pure phenol or liquor cresolis comp. U. S. P. It is a good idea to massage the injected area for a few minutes. The glass container should be washed off in an antiseptic solution and opened after making one or more cuts near the top with a file. The vaccine can be drawn out of the container with a syringe, or it may be emptied into a salt cellar which has been sterilized by boiling. The syringe and needles should be sterilized by boiling in a 2 per cent. solution of soda. It is necessary to be sure and have perfect sterilization. A fresh needle must be used for each man, or if the same be used it must be plunged into boiling soda solution to resterilize it. The most suitable time for the administration of the vaccine is about 4 o'clock in the afternoon, as the greater part of the reaction then occurs before morning. No applicant should be vaccinated who is not perfectly healthy and free from fever at the time; and it is advisable in case of doubt to take the temperature and examine the urine. In case of any man who has fever or any other signs of illness, it should be postponed until he recovers. This precaution is necessary to avoid the vaccination of men who may be coming down with typhoid fever.

According to the method most used now, three doses are given, ten days apart; the first of 500 million, and the second and third of 1,000 million each. This interval of ten days has been adopted because experience has shown that nothing is to be gained by giving the doses at shorter intervals. The method of giving it is simple and easy, and it can readily be done by any physician with due care for cleanliness.

### REACTION AND PRODUCTION OF IMMUNITY

There is usually some headache and malaise, and local reaction consisting of a red and tender area about the size of the palm of the hand, and sometimes tenderness in the axillary glands. The entire reaction is over in forty-eight hours, and during this period it seems best not to permit any active exercise, such as long walks or rides. Some few individuals may be very susceptible and develop a severe general reaction, (headache, backache, nausea, vomiting, herpes labialis and, rarely, albuminuria, and some loss of body weight). The number of severe reactions has been small, and regardless of their severity they all disappear completely inside of forty-eight hours.

The production of large quantities of specific antibodies does not become evident until about eight or ten days after vaccination. The second dose is therefore not given until the first has become effective, since there may be a temporary fall in the quantity of protective bodies present in the serum after the administration of the second and third doses.

The question of increased susceptibility, or anaphylaxis, as it is termed, is one of some importance and worthy of remark, because it is still under discussion and in dispute to some extent, and has a bearing, perhaps, on the ideas of some against the inoculation. It is believed now, I can properly say, by most investigators, to be of no great importance, and so far I have been unable to obtain the history of any distinct case of anaphylaxis to typhoid vaccine. It is safe to say, therefore, that ordinarily the protection against typhoid commences immediately after the first dose and gets stronger and stronger up to a point as yet undetermined, because the inoculations have been so recently used in any great numbers that it is not yet possible to exactly determine the duration of the immunity from any available statistics.

But we know it gives protection and can do no harm; therefore, even if it only lasts a short time, why not use it? The English statistics quoted above show that it will last three years, and that is certainly long enough, because in the army one can easily revaccinate a man, and three years will carry a soldier through most campaigns. And again, three years will cover most nurses' period of training and most doctors' days of hospital work; and so, again, why not use it?

Antityphoid inoculation has been heartily indorsed by the Surgeon-General and his associates, after a rigid investigation of the subject by a board of eminent physicians of the country; and the Secretary of War has been asked to make it compulsory for all recruits, and it is hoped he will soon do so. So it will be seen how thoroughly convinced the U. S. Army medical department is of its desirability. The British authorities stand in the same position, as also do many civilian practitioners. In the U. S. Army it is explained to the men by lectures, and examples are shown, and so far

we have had a ready response from the men. I personally have inoculated over 200 applicants, and have not seen a patient sick enough to go to bed; and at Fort Barrancas, Florida, where the men have constantly been more or less exposed to typhoid fever, there has not been a case for nearly two years among approximately 700 men; and while as yet they have not all been inoculated, yet many have, and each one protected helps to prevent somebody else from getting the disease.

The history of the use of antityphoid inoculation we know goes back to 1898, and to many of us it may seem strange that such a promising procedure has been used so little up to date; and yet it seems not to have been popular or widely used among hospitals in civil life, in institutions, or among gangs of men working on big jobs. One of the main reasons for this is the idea among the people—and I find this is so to quite an extent in the army, too—that it gives the patient a bad sore arm, makes him sick and really prostrates him. This is not true. Very few suffer at all from it, and it is not to be compared in severity with the ordinary reaction from smallpox vaccination.

### CONCLUSIONS*

Now, therefore, considering all the data I have presented on the subject, it seems that the present status of these inoculations against typhoid fever is that they are valuable as a method of preventing the disease and are perhaps the most valuable single asset we have in combating an epidemic, and that there is surely no doubt in the minds of most thinking and up to date medical men that they should be used in the following classes of persons: first, all nurses, ward attendants, hospital corps men, red cross assistants, physicians and medical students; also all persons who contemplate a journey into a section where typhoid is known to exist or is suspected of existing. Also, the inoculations should be done generally in districts suffering from an epidemic, and especially in the families where a case exists, and I might add that in time of war all volunteers at camps of concentration should be inoculated as soon as possible after the camp is started.

Finally, it seems that typhoid will always be with us, but there is no necessity of its always being with us in our armies to any such appalling extent as it has in the past; therefore, the necessity for antityphoid inoculations will surely always be with us, for no matter how careful we are of our sanitation, our milk, our water, our flies, our contact infection, we will always have one or more of our much talked of friends, the chronic typhoid carriers, and it is only by inoculating them and other friends and acquaintances that we can keep more or less of them free from typhoid.

I am convinced of the harmlessness, and at the same time, of the effectiveness of this procedure, and would recommend its universal adoption, to the end that our armies in time of peace and war, and our communities at all times, may be kept as free as possible from that terrible epidemic disease, typhoid.

And last, but not least, I believe I can state from a careful study and investigation of the matter that the present status of antityphoid inoculation as a means of prevention is assured, and that its future possibilities are great.

* Nearly 1,000 additional cases have been inoculated since this article was prepared, with about the same results; and Colonel Leishman's recent lectures before the Harben Society show, I believe, the same good results in the very latest work in the British Army.

## THE TREATMENT OF SYPHILIS WITH EHRLICH'S "606"*

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### PART I. THE THEORETICAL AND EXPERIMENTAL BASIS FOR THE USE OF "606"

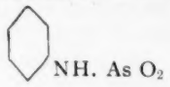
The object of experimental chemotherapy is the preparation and discovery of drugs which shall possess specific powers over given parasitic micro-organisms. The pursuit of this object has recently been greatly promoted by the discovery by Professor Ehrlich of a drug which possesses extraordinary power of destruction over certain, at least, of the parasitic spirochetes. Ehrlich has for many years been engaged in the synthesis of drugs, the ultimate purpose of which was the destruction within the body of such parasitic organisms as trypanosomes and spirochetes under conditions in which the organic cells of the host would be left unaffected. In other words, and to use Ehrlich's terminology, it was necessary to seek drugs which were on the one hand highly parasitotropic and on the other were quite devoid of organotropic activities. In the course of this quest, Ehrlich has had the good fortune to produce a number of drugs which more or less fulfilled these ideal conditions, but recently the quest has been crowned with an extraordinary achievement that promises to be of the greatest importance in the treatment of syphilis and hence of incalculable benefit to the human race.

We may begin by summarizing a fragment of the conceptions which led Ehrlich to his most recent important discovery: The animal parasites causing malaria, trypanosomiasis, syphilis, amebic dysentery, etc., apparently can not be successfully attacked by means of immune sera, and therefore their conquest must be attempted by means of ordinary chemical substances. The history of the treatment of malaria with quinin indicated that this line of attack is a feasible one, particularly in view of the fact that quinin represents the successful employment of one drug out of an innumerable series tried by man in nature. It is possible through the aid of modern synthetic chemistry to prepare an almost infinite number of combinations which can then be tested on animals infected with the animal parasites of the diseases named, until compounds are found which exhibit a higher degree of poisonous effect on the parasite than on the host. Having achieved this first selection, the partially successful compound can then be further altered by possible substitutions, which may serve to render it still more suitable for the purposes in view.

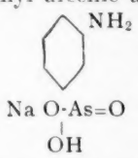
While Ehrlich was engaged in developing this line of investigation, the substance atoxyl, which is an empirical arsenical compound, came into use in the treatment of sleeping sickness, for which it proved a highly useful although not invariably successful drug. This substance, which was demonstrated to be more poisonous for one of these animal parasites than for the human host, became the starting point for chemical variations which culminated in the preparation of the compound "606."

* From the Rockefeller Institute for Medical Research, New York.

The starting point of the successful substitutions in connection with atoxyl was the working out of its real constitution. It had been considered as an anilid of arsenic acid,




which, being an unstable compound, would not allow of the necessary chemical manipulation and substitution. In collaboration with his chemical assistant, Bertheim, Ehrlich ascertained that atoxyl is in fact the sodium salt of para-aminophenyl arsenic acid,




In this compound the molecule of arsenic is firmly attached to the benzole ring, because of which the compound admits of the necessary manipulation and substitution at different positions in the ring. Different substitution products were next prepared and tested for their therapeutic effects on infected animals. Up to the present time, about 630 substitution products have been made and tested, of which four only have proved to possess the requisite parasitotropic properties, without at the same time being injurious to the organs of the host. These substances are: acetyl-atoxyl; arsenophenylglycin, or "418," tryparosan, and arsenobenzol, or "606." Excepting the drug tryparosan, arsenic is the active principle in all the preparations, the other chemical groups present merely serving to fix this substance to the parasite. Thus for example it has been found that the acetyl group has a special affinity for trypanosomes and the amino and hydroxyl groups a special affinity for the spirochetes.

It is obvious that this kind of pharmacologic research is possible only if animals can be used as the basis of experiment. Fortunately, the discovery of the transmissibility of syphilis to the lower animals and of *Treponema pallidum*, the parasitic cause of syphilis, came to be achieved about this time. Hence the new drugs could be tested not only against fowl spirilla and the spiral organisms of relapsing fever, but also against *Treponema pallidum* in infected rabbits. In due time preparation No. "606" came thus to be tested, and was proved to be efficient in a single dose, which while it sufficed to destroy all the parasites was without perceptible injurious effect on the host.

In the course of previous investigations, Ehrlich had ascertained that it was not safe to attempt to destroy the animal parasites by means of repeated small doses of an injurious drug, and for the reason that in the course of this method of treatment, the parasites often develop a toleration for the drug which they transmit to their progeny. The goal, therefore, became the discovery of a drug which in a single dose would destroy all the parasites, leaving the host uninjured, and this extraordinary achievement apparently is accomplished by "606."

### EHRLICH'S THERAPIA STERILISANS MAGNA

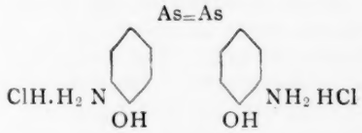
The drug having been proved by repeated tests on animals to be without injurious effect it was next tested on human beings. The first to submit to inoculation were the assistants, since which time several thousand persons suffering from various forms and consequences of syphilis have been treated.

The reports which are appearing at present in practically every number of the important German medical weeklies from different parts of Germany and Austria are almost unanimous in their testimony to the remarkable effects of the drug in syphilis. In all but a few exceptional instances a single dose of the drug has sufficed to bring about a rapid disappearance of the lesions of syphilis and equally rapid improvement in the general condition of the patients. In the few instances in which these rapid effects were not achieved the dose of the drug, which was originally given was, as is now established, too small, and in many of these cases a second and larger injection has brought about the desired result. It is noteworthy that in many instances the patients who have improved rapidly after an injection of this drug had resisted the application of mercury sometimes over many months, or possessed idiosyncracies which made the use of mercury difficult or impossible. Thus far, a special idiosyncracy against the drug has not come under notice. It is as yet too early to determine whether the patients who have responded so rapidly and perfectly to the administration of the drug as apparently to have been cured of this otherwise chronic disease by a single injection may ultimately suffer relapses. On the other hand many scores of patients have shown no relapses in the several months which have elapsed since the injections. What is highly important in the interests of prophylaxis is that within twenty-four or forty-eight hours of the injection of the drug superficial lesions, such as mucous patches, condylomata and primary lesions are freed from living spirochetes. This remarkable effect of the drug on the parasites can be readily demonstrated on the testicular spirochetal lesions of the rabbit, in which the innumerable spirochetes can be entirely immobilized within twenty-four hours with a single injection of the drug, after which the lesion quickly resolves.

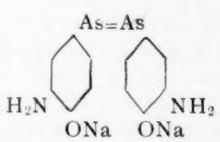
### ADMINISTRATION OF THE DRUG

The chemical name of "606" is paradiamidodioxydichlorarsenobenzole.

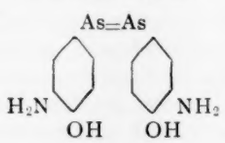
BASE




ACID SALT




ALKALINE SALT




The substance is a yellowish powder which rapidly oxydizes on exposure to air, and is therefore put up in vacuum tubes. It dissolves in water with difficulty, making a strongly acid solution. As the acid solution is very painful, the substance is administered either as a neutral base (Wechselmann) or as an alkaline salt (Alt). The administration is by injection deep into the muscles, or into the veins or beneath the skin. At first, the administration was made either deeply into the muscles of the buttocks or into the circulation, but at present it is recommended that the administration be made subcutaneously according to the method of Wechselmann.

According to this method, the drug, in a dose which has varied up to the present from 0.3 to 0.6 grams, is dissolved in a mortar in 1 to 2 c.c. of ordinary solution of sodium hydrate. Acetic acid is then added, drop by drop, until the base precipitates out in the form of a fine yellowish suspension. This precipitate is collected in subdivide the precipitate as finely as possible, which can be done by rubbing. The suspension is then drawn into a suitable syringe and injected subcutaneously below the shoulder blades after previous cleansing and disinfection of the part. It often happens that there is slight pain lasting a few minutes following the injection, and in

TABLE OF RESULTS OF USE OF EHRLICH'S 606 IN SYPHILIS

| No. | Age. | Sex. | Infection. | Previous Treatment. | Condition Before Injection. | Injection. | Local Effects. | Condition After Injection. | Serum Reaction. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25 | M | 1/10, chancre; 2/10, secondaries | 11 injections 1 gr. Hg Sal. | General secondary eruption; enlarged lymph nodes; serum+ | 5/12/'10; 8 c.c. each buttock. 0.3 606, not completely dissolved. Alt method. | Induration for 7 days, slight pain. | No improvement in 3 weeks. | 6/16/'10+35 days. | Small dose, resumed mercury. |
| 2 | 38 | M | 1905, chancre and secondaries. | Irregular..... | Tertiary syphiloma of back and chest; serum ++ | 5/12/'10; 8 c.c. each buttock. 0.3 gm. 606, not completely dissolved. Alt method. | Marked induration, 7 das. scaly erythema of hands and feet. | Slight improvement in 3 weeks. | 6/10/'10++29 das. | Small dose, resumed mercury and KI; drug eruption. |
| 3 | 21 | M | 3/1910, chancre; 5/1910, secondaries. | Only local treatment. | Circinate syphilid of face; macular syphilid of trunk; enlarged lymph nodes; serum ++ | 5/16/'10; 0.3 gm. 606; 8 c.c. each buttock. Alt method. | Induration of buttocks for 7 days. | After 8 dys. lesions gone on face, and faint on body. | 5/23/'10+7 days. | Left hospital 5, 24, '10, considering himself well. Could not be traced. |
| 4 | 32 | M | 5/1907, chancre and secondaries. | More or less constant; liquid. | Scaling syphilid of palms severe. Serum ++ | 5/16/'10; 0.3 gm.; 12 c.c. each buttock. Alt method. | Induration lasting 7 das., slight fever 2 days. | 5% improvement in palms after 7 days. Completely healed in 1 month. | 6/10/'10—25 days. | Began to work as orderly in hosp. 6/6; apparently cured by single injection. See Photographs Figs. 1 and 2. |
| 5 | 20 | F | 4/1910, secondaries | 4 grs. Hg Sal. by injection | 6 mos. pregnant; faint eruption. Serum + | 5/19; 0.3 gm. 606; 10 c.c. each buttock. Methyl alcohol. | Marked induration 5 days. urticarial eruption 2 days. | Apparently well in 21 days. | 6/28 — 39 days.... | Aborted 5/29; fetus badly macerated, could not be obtained for examination. |
| 6 | 24 | M | 10/1909, chancre; 12/1909, secondaries | Mercury in pill form for several months. | Severe rupial lesions, face, head and arms; hysterical. Serum ++ | 5/19; 0.3 gm. 606; 10 c.c. each buttock. Methyl alcohol. | Slight induration 4 days. | Marked rapid and progressive improvement. Lesions healed in 39 days. | 8/30 — 3 mos. 11 days. | Gained 12 pounds. No recurrence in 3 mos. Photograph Figs. 3, 4. |
| 7 | 51 | M | 1882, chancre and secondaries. | 10 days treatment in 1882. | Ulcerating syphilid of knee and leg. Serum ++ | 5/23; 0.3 gm. 606; 10 c.c. each buttock. Methyl alcohol. | Marked induration of buttocks 7 days. | Sinuses closed induration gone and lesions of light color 21 days. | 6/10 — 24 days.... | Apparently cured. |
| 8 | 25 | M | 10/1909, chancre; 1/1910, secondaries | 2 grs. Hg Sal. by injection | Mucous patches, fading follicular syphilids of body. Serum + | 5/23; .03 gm. 606; 10 c.c. each buttock. Methyl alcohol. | Slight induration. | Marked improvement, lesions gone in 2 weeks. | 6/11 — 19 days.... | Apparently cured by single injection. |
| 9 | 28 | M | 5/1909, chancre; 9/1909, secondaries | "1 bottle of medicine." | Severe extensive pustular and tubercular syphilids of face and shoulders. Serum ++ | 5/26; 0.3 gm. 606; 10 c.c. each buttock. Methyl alcohol. | Induration of buttock 5 das. | Marked improvement. Lesions dry and faint in 14 days. | ..... | Gain in weight. Left hospital and could not be traced. |
| 10 | 24 | M | 1907, chancre and secondaries. | KI 7 months | Severe periostitis, left tibia. Serum + | 6/2; 0.3 gm. 606; 10 c.c. each buttock. Methyl alcohol. | Marked induration 7 days. | Pain and swelling disappeared in 8 days. | 8/30 — 3 mos. .... | No recurrence in 3 mos. |
| 11 | 28 | M | 1/1910, chancre; 5/1910, secondaries | No treatm't. | Mucous patches and macular eruption on face and legs. Serum + | 6/2; 0.3 gm. 606; 10 c.c. each buttock. Methyl alcohol. | Induration 7 days. | Face and leg clear in 7 days. | 6/23 — 21 days.... | Apparently cured by single injection. |
| 12 | 22 | M | 4/1910, 3 chancres on lips; 5/1910, secondary eruption. | 2 grs. Hg Sal. hypodermically. | 3 large indurated chancres on lips; erythematous papular eruption on body. Serum ++ | 6/2; 0.3 gm. 606; 10 c.c. each buttock. Methyl alcohol. | Induration of buttock 5 days. | Chancre gone, eruption very faint; 21 days. | ..... | Great improvement in general condition. Photograph Figs. 5, 6. Could not be traced after leaving hospital. |
| 13 | 29 | M | 1905, chancre and secondaries. | Treated 4 wks. in hospital, 1905; 1906, 8 weeks in hospital. | Arthritis of knee, broken down glands of groin, emaciated, anemic. Serum + | 6/7; .03 gm. 606; 7 c.c. each buttock. Methyl alcohol. | Slight induration. | Marked and rapid improvement in general condition and lesions in 10 days. | 6/30 — 23 days.... | Apparently cured; 8/30 working as longshoreman; has gained 30 lbs.; serum — |
| 14 | 20 | F | 6/1910, chancre and secondaries. | No treatment. | Mucous patches, general eruption. Serum. | 6/7; 0.3 gm. 606; 7 c.c. each buttock. Methyl alcohol. | Induration 5 days. | Eruption and sores disappeared in 10 days. | ..... | Left hospital and could not be traced. |

from 1 to 2 c.c. of sterile distilled water, and there are added either 1/10 normal sodium hydrate, or 1 per cent. acetic acid, as needed, until the reaction becomes precisely neutral to litmus. According as the reaction is or is not accurately neutral the injection will be followed by much, little or no pain. It is moreover desirable to some instances a slight swelling arises on the second or third day following the injection, but no bad effects are produced. There may be slight rise of temperature and in some instances an urticarial eruption has occurred, but no specific toxic effects on the eyes, kidneys, or nervous system have been observed.

PERSONAL OBSERVATIONS

Although the number of cases to be reported on at present is small, the results have been so striking, and are in such accurate accord with the several thousands of cases reported from Germany that it has seemed desirable to make this report, especially because it is probable that the drug will come to be extensively used throughout the United States. The patients were all in the City Hospital on Blackwell's Island, in the skin and venereal wards. The clinical diagnoses were all definite and unmistakable, and the serum reactions which were made regularly were conducted with the Noguchi modification of the Wassermann method.

Fig. 1.—Scaling syphilid of palms. A. K. Duration of infection, three years; of palmar lesions, one year. May 16, 1910, 0.3 gm. 606. Wassermann before treatment, ++; June 10, 1910, negative; Sept. 1, 1910, still negative. (See photograph after treatment.)

In injecting the preparation into the first two patients considerable difficulty was experienced in getting the powder into solution, and the full dose of 0.3 gram which it was intended to administer was therefore not given. As we now know, 0.3 gram is a submaximal dose. These patients were injected before the method of Wechselmann had come into use, and even before the earlier modification of the original "Alt" method of preparation suggested by Ehrlich had been published. As a result no marked improvement occurred and the patients were put back on mercurial treatment. The remaining twelve received the full dose intended, and included examples of primary, secondary and tertiary lesions. The effects were in these instances truly remarkable and now, from three to four months after the injections relapses have not been observed to occur. Before the treatment the serum reactions were all positive and at the expiration of the time mentioned, in all the patients who could be traced, they have become negative. Aside from the temporary local disturbance caused by the injection in some instances, no untoward symptoms were observed, except an urticarial eruption in two of the cases. None of the patients received more than 0.3 gram, which is about one-half of the dose now being employed abroad. Hence it would not be surprising if in this first group relapses occurred. If so it would be both safe and desirable that a second and larger injection be given.

The efficiency of the drug is dependent in part on the dose employed. Hata has permanently cured all rabbits having spirochetal lesions by means of a single dose of an adequate size. We have found that when the dose is too small, relapses occur in the infected rabbits. Hence now that it has been determined that a dose of 0.6 gram is non-toxic for human beings, it is probable that the average dose will approach that quantity. At present, European observers are employing doses varying from 0.45 to 0.6 gram.

The drug is not generally available at the present time. The output is too small for general distribution, and Ehrlich has therefore up to the present been able to supply it to relatively few physicians, whose employment of it has also been in the nature of tests of its value. The final word concerning its value will not of course be said for a number of years, but the fact remains that we possess no drug the extraordinary effects of which in syphilis equals that of "606."

Fig. 2.—Scaling syphilid of palms. A. K. Condition of palms two weeks after treatment with 606. (See photograph before treatment.)

The one drug with which it may be compared is quinin, which in many instances is so highly efficient in the treatment of malaria, but even there a single dose does not suffice to destroy all immediately visible parasites, as does an adequate dose of "606."

## PART II. THE USE OF "606" FROM THE STANDPOINT OF THE CLINICIAN

Personal experience in the treatment of syphilis has convinced us that mercury given in the early stages in as large doses as the system will tolerate insures the patient more certainly against relapses, and that patients who are treated by small doses over long periods of time in the manner which is still too often employed by even the best known syphilographers sometimes develops in the patient thus treated an immunity to the drug which renders it comparatively inert. This latter class of patients not infrequently become the subjects of obstinate relapsing lesions of the skin and mucous membrane or, later, the victims of paresis, tabes, or other visceral or bone affections. Professor Ehrlich's contention, therefore, as to the value of a drug which at one dose destroys the invading organism is supported by clinical experience in the use of mercury. It is true that the methods of administering the latter have been greatly improved in the last few years, as is witnessed by the greater frequency with which it is employed hypodermically and by inunction, but our present means are still too often slow or inefficient in their action especially in the early stages. Delay or insufficiency in the amount of mercury at this time permits the entire system to become infected by the *Treponema pallidum* and damage to the blood-vessels or important structures takes place which might be prevented by energetic treatment. It will generally be conceded by physicians who come in contact with a large number of syphilitics that while mercury and potassium iodid are efficient in the great majority of cases in controlling the manifestations of the disease, there are certain intractable cases in which they fail to control the symptoms either on account of idiosyncrasy to one or both of these drugs or other causes. Furthermore, owing to the length of time required in treating a case of this infection patients often become discouraged and cease medication after a few months or a year or two. The great advance made in controlling the treatment by the Wassermann reaction cannot be too strongly emphasized, showing as it does that in the past some patients may have been greatly overtreated while the majority have received too little of the specific drugs. It is well known that there are certain cutaneous and general manifestations of syphilis which respond slowly or not at all to mercury even in heroic doses. Among these may be mentioned certain scaling syphilids of the palms, chronic nodular syphilids in patches of the type which clinically resembles lupus vulgaris, certain forms which affect the flush area of the face and bear a marked clinical resemblance to lupus erythematosus; also mucous membrane affections like leucoplakia, chronic interstitial glossitis and relapsing deep and superficial lesions of the tongue and throat. Aside from these lesions which are under direct observation there are the so-called parasyphilitic manifestations, such as tabes, the treatment of which by the classical drugs leaves much to be desired. In malignant syphilis with early destructive lesions and the development of profound cachexia, mercury, moreover, often fails to do good and not infrequently does harm. When, therefore, Dr. Flexner, of the Rockefeller Institute, in the early part of May, this year, received a supply of the new preparation "606" and asked to be allowed to try it in a number of selected cases in the City Hospital, the proposition was received with favor and the patients in the skin and venereal wards were placed at his disposal. At that time the experience in the use of the drug had been rather limited and the patients who were treated were carefully selected as free from organic disease of the kidneys, heart or eyes; in fact, all the contraindications for the use of the drug, as stated by Prof. Ehrlich, were carefully observed. The patients were also informed that a new drug was about to be employed which would cause them a considerable amount of pain and was yet in the experimental stage. There was no difficulty in obtaining their consent, and the most striking testimony as to its value in the treatment of obstinate cases of lues was furnished by other patients in the wards, who on seeing

Fig. 3.—Nodular and ulcerating syphilid. W. C. N., date of luetic infection, October, 1909. Rupial and fungating lesions of face and arms of six months' duration. May 19, 1910, received 0.3 gm. 606. Wassermann before treatment, ++; Aug. 30, 1910, negative. (See photograph after treatment.)

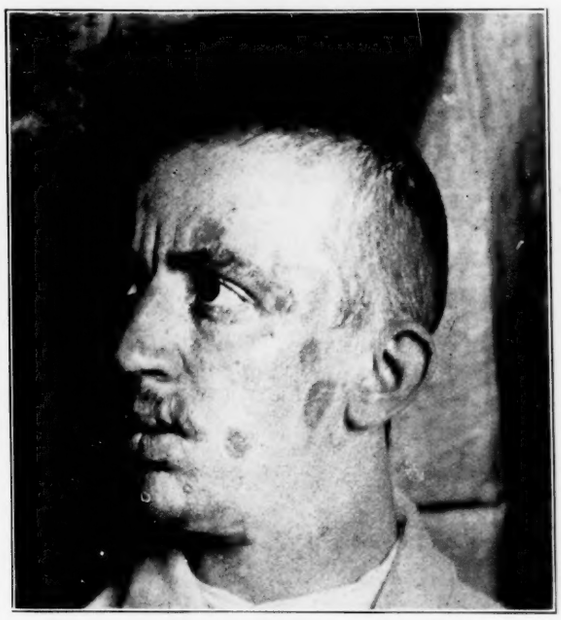


Fig. 4.—Nodular and ulcerating syphilid. W. C. N. After treatment with 606. (See photograph before treatment.)

the results accomplished by its use repeatedly asked that it be given to them.

The rapid action of arsenobenzol in cases of obstinate syphilis of the palms is strikingly illustrated in Figures 1 and 2.

Patient, aged 32, had a genital chancre three years before, which was followed by the usual secondary symptoms. Following his infection he had taken medicine in "liquid and capsule" form almost continuously. The eruption on his hands was of one year's duration. The Wassermann reaction was strongly positive. On May 16, 1910, he received 0.3 gm. "606." Two weeks afterward his palms presented the appearance shown in Figure 2 and in another fortnight he was entirely well.

The result obtained by the use of "606" in this case was far more rapid than any which we have seen after the use of mercury. Furthermore, after an apparent cure from mercury in these cases of chronic palmar syphilis the majority relapse within a few weeks to a month or two, whereas this patient had had no recurrence up to

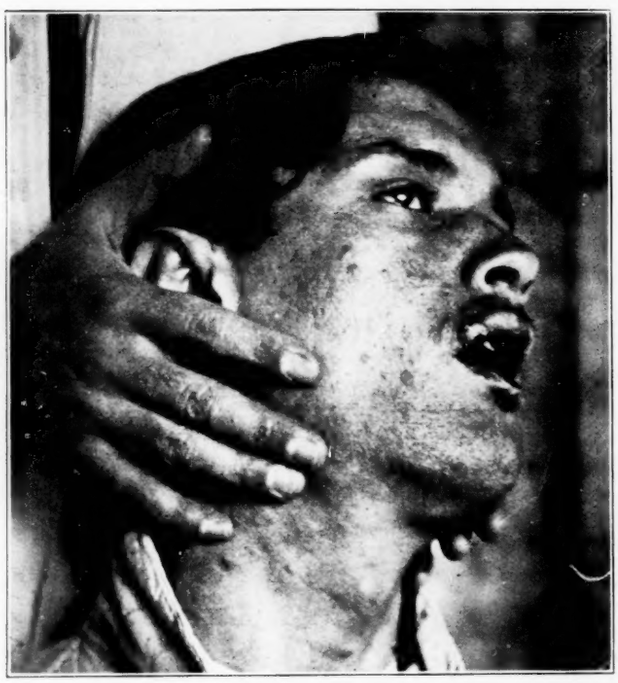


Fig. 5.—Multiple chancres. J. S. C., infection two months ago. Two chancres on upper lip and one on lower in median line; papulo-erythematous eruption on body. June 2, 1910, 0.3 gm. 606. Wassermann before treatment, ++. (See photograph after treatment.)

September first and the Wassermann reaction has remained negative.

In the case of multiple initial lesions of the lip (Figures 5 and 6) of two months' duration, with secondary manifestations of the skin, complete resolution of the chancres took place within about ten days, leaving practically no evidence of their former existence. The entire appearance of the patient, too, underwent a marked change, as before treatment he was anemic, depressed, and evidently showing considerable constitutional disturbance from his infection. The great improvement which took place in his general condition after the injection continued up to the time he left the hospital. The Wassermann reaction at that time was negative. The duration of the initial sclerosis under mercurial treatment is a very variable one. It is unusual, however, to obtain complete resolution under several weeks to two or three months; in fact, the induration sometimes persists for a year or longer. As these extragenital initial lesions are a source of great mental distress to the patient and one of danger to his environment, their rapid retrogression under this remedy surpassed the result which could have been expected from mercury.

Figures 3 and 4 illustrate a rather malignant form of eruption which occurred less than one year after infection:

Patient, aged 24, contracted syphilis in October, 1909. A month later a pustular eruption appeared first on his face and then on the body. The lesions become rupial and afterward assumed a fungating type. He also suffered from sore throat, headaches and osteocopic pains. From October up to the time he entered the hospital he had taken mercury in pill form. On May 19, 1910, he received 0.3 gm. "606." There was a perceptible change after a week; the patient's general condition improved and in two weeks he gained 9 pounds.

This form of early malignant syphilis, which indicates low resisting power on the part of the infected

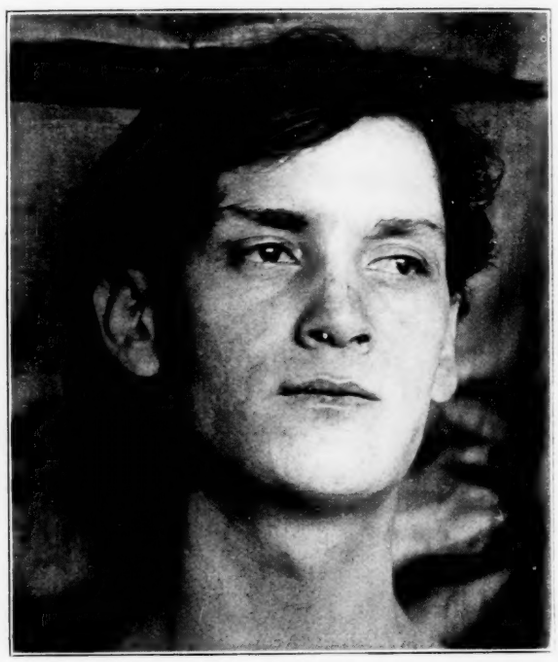


Fig. 6.—Multiple chancres. J. S. C. After treatment with 606. (See photograph before treatment.)

individual, sometimes fails to respond to mercury. The almost magical result which followed the use of "606" is illustrated in Figure 4 which was taken about two weeks after the administration of the drug. Up to September 1 the patient had remained well and showed a negative Wassermann reaction.

The cases just referred to are examples of the most brilliant results obtained. In the table additional data are given bearing on the other cases which were treated at the City Hospital. Through the kindness of Dr. Flexner, we have been able in the past month to secure a sufficient quantity of the remedy to treat several private patients who are still under observation; the cases will be reported in greater detail later. One of these was a case of rapidly progressing optic neuritis with tabetic symptoms, the result of a specific infection twenty years before:

Patient, referred by Dr. Marks of Frankfort, was a man, aged 38, in whom it was noticed two and a half years ago

that his pupils were smaller than normal. Shortly afterward, he developed a diplopia which was diagnosed by the ophthalmologist as paralysis of the right abducens and beginning atrophy of the optic nerve. From that time until August 1 he had been under active mercurial treatment but without benefit. His vision since April, 1910, has been rapidly diminishing and he has concentrically contracted field, Argyll-Robertson pupil and partial atrophy of both optic nerves. Although we recognized that affections of the optic nerve are given as a theoretical contraindication to the use of "606," still at the urgent solicitation of the patient and his friends the drug was administered, but he was told beforehand that very little result was to be hoped for. A dose, 0.45 gm., was prepared after the method of Wechselmann and injected beneath the right shoulder blade. This was followed by severe pain which persisted for three or four days and had to be controlled by several hypodermics of morphin. On the second day, a marked swelling appeared at the site of injection which began to resolve at the end of a week. At no time was there any evidence of softening. The patient's temperature rose slightly on the second day reaching 100.4 F.; his pulse was rather high for the first week varying from 90 to 110 and he developed considerable physical weakness. Although little result was expected from the drug in this case, the patient is under the impression that the rapid progress of the disease has been arrested.

In the following case of cerebral syphilis an improvement took place in some of the symptoms which mercury and other medication had failed to influence:

Patient was a man, aged 38, whose infection dated back six years. In February, 1910, the neurologic examination made by Dr. M. G. Schlapp was as follows: "Pupils unequal, the right being larger; they react to light, not to accommodation—very nearly Argyll-Robertson condition. Speech thick, not truly scanning. General involvement of the muscles of the pharnyx, tongue and face on right side; anesthesia in the same area. Partial paralysis in the right leg. Foot dragged in walking; weakness in the leg is sufficient to prevent standing on it. Babinski sign pronounced; clonus in both knee and ankle, the whole leg anesthetic." In spite of vigorous mercurial and iodin medication there occurred an increase in symptoms and area involved in June, 1910, while staying in England. The patient lost consciousness on several occasions; he also had facial paralysis complete for a time on the right side. Both legs developed weakness and anesthesia (patient's statement). A similar attack occurred in July, 1910, after a slight improvement, again involving both legs and right side of the face. Incontinence of urine marked. Under 43 injections of a mercury arsenalate, 20 inunctions and a daily dose of 3 grams of sajodin, rest and hydrotherapy, sufficient improvement occurred to enable the patient to get about.

On August 31 he was given an injection of 0.45 gm. "606" subcutaneously. A Wassermann reaction on this day was positive. Absolutely no pain followed this injection, nor were any unpleasant effects of any kind experienced except the induration which persisted for ten days. Improvement was noted on the day following the injection and he left the hospital on the second day, remaining in bed, however, in his home for two or three days longer. On the day succeeding the injection the patient stated that the mental depression from which he suffered weeks before had become materially less, his facial paralysis showed improvement and his speech disturbance was less marked.

A second examination made by Dr. Schlapp on September 9, nine days after the injection of "606" is as follows: "Pupils in same condition as at first examination. Incontinence has ceased. Paralysis of face and speech muscles has improved; anesthesia the same as at first examination. Right-sided sweating of the face, neck and upper part of the trunk. Both legs show Babinski sign, ankle and knee clonus, indicating extension of the process since February. There is, however, a noticeable decrease in anesthesia and muscular weakness. Diagnosis: Syphilitic obliterating endarteritis of the base, involving both pyramidal tracts and the sympathetic."

The patient was kindly referred by Dr. James C. Johnston, under whose care he is at present. A further report will be made at a later date. (September 21, Wassermann reaction still + —.) The absence of pain in this case was probably due to greater experience and care in preparing the remedy. Iit is important to emphasizs the necessity of thoroughly rubbing the precipitate which follows the addition of acetic acid to the caustic soda solution until a homogeneous paste is obtained. The neutralization of the mixture should then follow and the latest technic as given by Wechselmann[1] observed.

The question of danger in the use of the new drug is one that should be touched on. It would be a marvel should a drug so potent as this one in the destruction of living parasites within the body be wholly devoid of injurious or secondary effects on the organs. We possess indeed no really pharmacologically active drug for which there may not exist contraindications and from which secondary and objectionable effects have not been noted. Certainly neither mercury nor iodid of potassium form exceptions to this rule. The remarkable fact about "606" is that in the several thousand cases in which it has already been employed, and considering the wretched physical state in which many of the patients were at the time of the injection, so very few untoward effects have occurred. It is now clear that the mode of administration is important, and especially the elimination of the methyl alcohol used at an early period to dissolve the drug, since this substance may produce unpleasant if temporary symptoms, as in the three cases reported by Bohac and Sobotka.[2] The result in a case of Hoffmann's[3] in which a central embolic pneumonia, terminating in recovery, followed an intragluteal injection, was probably analogous to the condition of the lungs which may follow from an intramuscular injection of insoluble mercurial salts when the needle has inadvertently penetrated a vein. Ehrlich has warned against the administration of the drug to weak patients suffering from advanced cardiovascular disease, and the wisdom of this precaution has been emphasized by the two accidents encountered at the Charité in Berlin and the neurologic clinic at Bonn. Ehrlich further warns against the use of the drug in cases in which lesions of the optic nerve exist, and urges that in doubtful cases an ophthalmologic examination be made. Finally, it has just been announced that a further improvement in the preparation of "606" has been made which still further reduces the toxicity—indeed it is stated to be one-third that of the older substance. To this preparation Ehrlich has given the name "hyperideal."

From the collective reports of those who have used the drug the impression is gaining that we have in arsenobenzol a most thorough agent in controlling the manifestations of syphilis which are caused by the presence of the treponema. It may reasonably be hoped, therefore, that all the lesions which depend on the presence of the organism will be favorably influenced and the most we can expect in the secondary degenerative changes is that the process may become arrested. Further experience with the drug will determine with more accuracy the dose which is necessary to bring about a cure, the time that must elapse before a second dose can be safely given and the more definite indications for its

1. New York Med. Jour., Sept. 3, 1910, p. 449.
2. Wien. klin. Wchnschr., July 28, 1910.
3. Med. Klin., Aug. 14, 1910, p. 1291.

use after relapses or failure of a single dose to control the symptoms.

The authors desire to acknowledge the courtesy of Dr. Robert H. Greene and Dr. Eugene Fuller in placing certain patients at their disposal.

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**Position Assumed by Patient in Ear Disease.**—According to W. E. Chamberlain in the *Ohio State Medical Journal*, in case of nystagmus of otitic or cerebellar origin the position of the patient in bed is of interest and easy of explanation. With a circumscribed inflammation on the right side and with it a nystagmus to the right, the patient lies on the right side with the head buried in the pillow. In this position, the eyes are turned involuntarily toward the left and the nystagmus and dizziness are decreased. Let now a diffuse suppuration follow the circumscribed or let the right labyrinth be removed by operation, then the patient does not lie on the right but on the left side, for in this position the eyes are directed to the right. The nystagmus and dizziness, most extreme with vision toward the left are decreased by looking in the opposite direction. Placed in the Romberg position, a patient with nystagmus to the right will fall to the left and *vice versa*. In other words, he falls in the direction of the slow component.

# CREATININ AND CREATIN METABOLISM IN CHILDREN *

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MINNEAPOLIS

In a lecture, delivered before the Harvey Society two years ago, Folin[1] said:

I venture to predict that we shall learn more concerning the abnormal or subnormal metabolism of the sick on the basis of creatinin and creatin determinations alone than could be learned in another thirty years by means of the nitrogen determinations of the past.

Creatin is methyl guanidin acetic acid and may be converted into creatinin by the withdrawal of one molecule of water. It would seem remarkable that creatin, which is the most important of the extractives of muscle and the chief constituent of broths and beef extracts, and creatinin, a constant constituent of the urine, should have received so little attention in clinical medicine. This seems to be even more striking when we consider that uric acid, which appears usually in smaller quantity, both absolutely and in nitrogen content, in human urine, has been the subject of so much discussion.

The explanation lies in the fact that the older method of determination, which depends on the precipitation of creatinin with zinc chlorid, was very tedious and unreliable. It was in 1904 that Folin[2] published his accurate and simple method of determination which has given such an impetus to the study of creatinin and creatin metabolism. Folin's method depends on the fact that creatinin gives, with picric acid and sodium hydrate, a brownish-red color which cannot be distinguished from that of a potassium bichromate solution. The urine is treated with the above reagents, in proper quantity, and the resulting depth of color compared with that of a half normal bichromate solution. The degree of color produced is read off on a colorimeter and the creatinin content is thus given. Creatin may be estimated by boiling it with normal hydrochloric acid, thus converting it into creatin, which latter is then determined as above.

Evidently the creatin and creatinin excreted may come either from the food taken in or from the metabolism within the body, exogenous or endogenous. On a creatin- and creatinin-free diet Folin was able to show that normal persons excrete creatinin but no creatin. Creatin given by the mouth, unless fed in large quantities, does not appear in the urine, and then in part only. The administration of creatin was found to have no effect on the amount of creatinin excreted.

Both Folin[3] and Hoogenhuyze and Verploegh[4] were able to demonstrate the very interesting fact that, although the creatinin excretion differs in different subjects, a given individual, under normal conditions, excretes a remarkably constant amount of creatinin. This is so constant, in fact, that at one time Folin was able to trace the loss of urine from a twenty-four-hour specimen because of the drop in the creatinin content.

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

* From the laboratories of Biological Chemistry, Harvard Medical College, and of Physiology and Pharmacology, University of Minnesota.

1. Folin: THE JOURNAL A. M. A., May 2, 1908, p. 1391.
2. Folin: Ztschr. f. physiol. Chem., 1904, xli, 223; and Am. Jour. Physiol., 1905, xiii, 48.
3. Folin: Festschrift f. Olof Hammarsten, iii, Upsala, 1906.
4. Hoogenhuyze and Verploegh: Ztschr. f. Physiol. Chem., lvii.

Hoogenhuyze and Verploegh found the creatinin excretion to be little affected by hard muscular exercise or by protein diet. A professional faster, who had taken nothing but water for fourteen days, did, however, show an increase of creatinin excretion after exercise. This is of interest in connection with the creatinin excretion during the first fasting days of infancy, and will be referred to later.

The creatinin excretion is higher, according to Hoogenhuyze and Verploegh, during the day than at night. The creatinin excretion is somewhat higher under the influence of alcohol and cola, but somewhat lower on days of rest. Van Hoogenhuyze's creatinin excretion rose from 1.85 gm. to 2.781 gm. during fever. A paralyzed patient, on the contrary, showed but 9.2 mg. of creatinin daily in the urine. During periods of excitement in insane patients the creatinin excretion rises. Creatin may appear in the urine of fever patients.

Pekelharing[5] says that creatinin excreted through the kidneys must be considered as: (1) from the creatin formation through the consumption of proteins in the tissues; (2) from the splitting and oxidation of creatin, and (3) from the dehydrating action.

If we turn now from this necessarily incomplete discussion of creatin and creatinin metabolism in adults to that in children, the creatin literature may be shortly disposed of. I know of no other analyses in children than those reported in this study and those of Amberg and Morrill.

We may take up the study chronologically. Are creatin and creatinin excreted before birth? If these bodies are excreted before birth they will appear in the amniotic fluid. Of course it is evident that the converse does not necessarily hold true. Creatin and creatinin in the amniotic fluid are not necessarily derived from the fetal kidney excretion. Their demonstration would, however, be an indication. Panzer's[6] analyses showed no creatinin or creatin in the amniotic fluid, but his work was published in 1899. Von Winckel[7] says that creatin and creatinin may be found in the amniotic fluid.

I acidified and boiled the amniotic fluid obtained from the extirpated uterus of a pregnant bitch, and filtered to remove the native proteins; 10 c.c. of the resulting fluid gave a faint but definite Jaffé reaction for creatinin; 50 c.c. of the same fluid evaporated to dryness, redissolved in 10 c.c. of water, added to 10 c.c. of normal hydrochloric acid and heated to 90 C. for four hours, thus converting all of the creatin, if present, into creatinin, gave, by Folin's method, 5.5 mgs.; 25 c.c. of human amniotic fluid, obtained without contamination, by puncturing the bag of waters before the oncoming head, were treated in the same manner. A definite creatinin reaction was given, but it was too dilute for accurate estimation. (Diluted to 100 c.c. it gave a reading of .25 mm. on the colorimeter.)

These results, taken with those immediately following, would point toward a fetal creatin or creatinin excretion.

As the first few days of life are passed under conditions quite different from those of later infancy, especially as regards food intake, it may be of interest to consider them apart. Here, again, I was able to find no results recorded in the literature. The interesting work of Amberg and Morrill[8] on the "Excretion of Creatinin in the New-born Infant" misses this period, as their youngest infant was 7 days old. The work of Rietschel,[9] Van Hoogenhuyze and Verploegh and others was done on older infants.

In the work with the urine of older infants, as carried on by other authors, the dilution of the urine has caused great technical difficulty, resulting at times either in the failure to discover the creatinin with the Weyl or zinc chlorid methods or requiring concentration by evaporation for quantitative work with the Folin method.

One is at once struck, in working with the urine of the first week, by the intense reactions. The per cent. of creatinin is as high as in adult urine, about 0.1.

The amount of creatinin excreted each day for each infant may be seen from Table 1.

TABLE 1.—DAILY CREATININ EXCRETION

| | | Age (Days) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Case. | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Bell | Day's quantity, c.c. | 18* | 20 | 10 | 30 | ..... | ..... | ..... | ..... | ..... |
| | Creatinin, mg. | 15.84 | 24.92 | 11.73 | 25.83 | ..... | ..... | ..... | ..... | ..... |
| Farley | Day's quantity, c.c. | 9 | 20 | 6 | 9 | 18 | 25 | ..... | ..... | ..... |
| | Creatinin, mg. | 4.5 | 19.76 | 3.98 | 6.68 | 11.85 | 18 | ..... | ..... | ..... |
| Baybrant | Day's quantity, c.c. | 20 | 75 | 53 | 37 | 60 | 185 | 130 | 315 | 120 |
| | Creatinin, mg. | 11.83 | lost | 50.5 | 17.24 | 28.23 | 32.56 | 15.95 | † | ‡19.88 |

* One urination lost.
† Urine dilute; slight creatinin reaction.
‡ Urine evaporated.

TABLE 2.—CREATININ AND CREATIN EXCRETION DURING THE FIRST DAYS OF LIFE

| | | Age (Days) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Case. | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Murphy (Baby) | Day's quantity, c.c. | *15 | 60 | 16 | 42 | 32 | 121 | 178 |
| | Creatin | 0.0 | 0.0 | 0.0 | 4.27 | 2.12 | 10.1 | ..... |
| | Creatinin, mg. | 12.00 | 33.34 | 9.95 | 21.0 | 12.09 | 30.25 | ..... |
| Lindman | Day's quantity, c.c. | 8 | 10.0 | † | 27 | 120. | ..... | ..... |
| | Creatin | ..... | 0.5 | ..... | 1.76 | 6.86 | ..... | ..... |
| | Creatinin, mg. | 13.2 | 10.12 | ..... | 3.96 | 12.36 | ..... | ..... |
| Bresitt | Day's quantity, c.c. | ..... | 64‡ | ..... | 14 | ..... | ..... | ..... |
| | Creatinin, mg. | ..... | 31.61 | ..... | 20.0 | ..... | ..... | ..... |
| Ricksnas‡ | Day's quantity, c.c. | 22 | 14 | 13 | § | 50 | 45 | ..... |
| | Creatin | 0.0 | 2.82 | ..... | ..... | 5.39 | 7.83 | ..... |
| | Creatinin, mg. | 25.45 | 14.14 | 10.68 | ..... | 25.25 | 14.89 | ..... |

* Eighteen hours.
‡ First 17 hours not collected. First day extends from seventeenth hour on first day to same hour on the following day.
† Portion lost.
‡ Three days combined.
§ One urination lost.

5. Pekelharing: Zentralbl. f. d. ges. Physiol., u. Path. d. Stoffwechs., iv, 8.
6. Panzer: Cited from fisiologia e pathologia del liquido amniotico, Trovoti.
7. v. Winckel: Handbuch der Geburtshülfe, I, 320, Wiesbaden, 1903.
8. Amberg and Morrill: Jour. Biol. Chem., 1907, iii, 311.
9. Rietschel: Jahrb. f. Kinderh., 1905, lxi, 615.

It will be seen that the daily excretion does not remain as constant as with adults. This may be apparent or real. It is evident that, when working with such small day quantities, a few c.c. of urine retained in the bladder at the end of a twenty-four-hour period would cause considerable difference in the result.

Creatinin was, however, present in each case.

The urines in Table 2 were heated over a water-bath for 10 minutes with 2 c.c. of normal hydrochloric acid in order to avoid any error which might be due to the acetone bodies, as the latter were found to be present at times during the first week. This series shows also that creatinin was continually present.

It will be noted in the table that these urines were also treated with 10 c.c. of normal hydrochloric acid for four hours to convert any creatin present into creatinin. Creatin is represented by the difference between the first creatinin reading and the second or creatinin and creatin reading.

These infants were all at the breast and therefore on an almost starvation diet, receiving nothing at first but a small amount of colostrum. In many cases creatin was present in demonstrable quantities, which seemed to increase markedly about the fourth day. Whether this was because of the period of starvation the infant had undergone, the beginning of feeding, both or neither, I am not prepared to say.

If we proceed to the period following the establishment of lactation we have the results of others for comparison. Most texts on pediatrics make no mention of creatin or creatinin. Langstein and Meyer[10] consider creatinin, and stress is laid on the point that, as the infant's food contains no creatinin, that which occurs in the urine must be of endogenous origin or from the "breaking down of certain body tissues—muscle."

So recent a work as von Noorden's Handbook (1906) follows Hoffmann[11] as authority for the statement that the urine of infants contains no creatinin. Hoffmann's work was done with the unsatisfactory zinc chlorid method. Rietschel,[9] working also with an imperfect method, came to a similar conclusion, although he did find traces in febrile urine, and after the administration of creatinin.

This was the state of our knowledge at the time that my study was taken up, in 1906. I found with Rietschel that the Weyl reaction and the zinc chlorid reaction did not give constant results. I did at that time, however, find that the Jaffe reaction for creatinin is constant in infant's urine. Hoogenhuyze and Vorploegh found creatinin present in infant's urine, although their analyses were not made on twenty-four quantities.

The first satisfactory published analyses are those of Amberg and Morrill,[8] in which they report five analyses on infants 10, 10, 14, 7 and 13 days of age. The infants excreted respectively 26, 26.92, 27.05, 17.48 and 3.01 mg. of creatinin per day. The last infant excreted 2.87 mg. of creatin. They[12] also report analyses made on the urine of an infant beginning with its twenty-sixth day. The analyses are given in forty-eight-hour periods and show: A, 76.9; B, 59.2; C, 75.2; E, 96.4; F, 66.4; G, 59.7; H, 62.7 mg. The creatin excretion during the same period was 11.6, 17.2, 11.1, 0.1, 8.1 and 11.7 mg.

Funaro,[13] working with the Folin method, found results similar to those just cited.

Amberg, Morrill and Funaro found it necessary to concentrate the urine of infants in order to get satisfactory results. I found, however, that such evaporation changes the proportion of creatin to creatinin, and I was obliged to depend on the somewhat unsatisfactory method of varying dilutions.

My results during childhood after the first week agree closely with those of the above-mentioned investigators, and I will take your time to cite a few results only for creatin and creatinin as determined without evaporating.

Baby M., 23 days old, creatinin 40.37 mg, creatin 2.41 mg. Baby Charles, 6 months old and weighing 5,580 gm., excreted 76.1 mg. of creatinin; and Eugene, aged 11 years and well, excreted creatinin when on a creatinin-free diet, the excretion during the twelve night hours being greater than that during the twelve day hours. His urine showed creatin rarely. Numerous analyses from older children with diphtheria, measles and scarlatina, all on creatin and creatinin free diets, showed creatinin constantly, but creatin rarely or in small amount. Thomas, a boy weighing 48 pounds, and a subject of cyclic vomiting, excreted on the fourth day of an attack, which was a hunger day, except for a few teaspoonfuls of a carbohydrate water, 1,278 mg. of creatinin and 49.9 mg. of creatin.

This and other analyses simply indicate a line of study which may give interesting results in disease. I wish, however, to warn against generalizations from insufficient data, and will omit further analyses in diseased conditions until sufficient material can be gathered to guard against mistakes.

## SUMMARY

The study of the creatin and creatinin metabolism in children, although a promising one, has been little worked on. The opinion held until five years ago that infants do not excrete creatinin is undoubtedly incorrect.

Creatinin is present in the liquor amnii, which may mean that its excretion begins before birth. Creatinin is always in the urine of the first week and in a concentration approximately that of adult urine. Creatin is also excreted during infancy. In later infancy creatinin is present in the urine uniformly, but in much more dilute condition than with adults, or during the first week.

Analyses of urine in disease indicate that we may hope to get some clue to the processes of nitrogen metabolism by the study of creatin and creatinin.

It is a pleasant duty to acknowledge my indebtedness to Professor Folin for valuable suggestions, Dr. Green and the house staffs of the Boston Lying-in Hospital, and my own interns at the Minneapolis City Hospital for aid in collecting material; Dr. Moren, for assistance in some of the analyses, and especially Dr. Beard, without whose aid in procuring apparatus this study could not have been carried out.

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10. Langstein and Meyer: Infant-Feeding and Metabolism, Wiesbaden, 1910.
11. Hoffmann: Virchows Arch. f. path. Anat., 1869, xlviii, 358.
12. Amberg and Morrill: Jahrb. f. Kinderh., 1909, lxix, 280.
13. Funaro: Biochem. Ztschr., 1908, x, 467.

**Prophylaxis of Ear Disease in Febrile Conditions.**—J. J. Pattee, in the *Laryngoscope*, urges: (1) The more general adoption of thorough removal of all adenoid vegetations; (2) the complete removal of hypertrophied or diseased tonsils; (3) the early evacuation of pus from the tympanic cavity by paracentesis, because the streptococcus is nearly always present in otitis due to febrile diseases.

# SYSTEMIC CONDITIONS IN RELATION TO ORAL SYMPTOMS AND SEPSIS*

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Until recently this subject had not attracted the attention of medical or even dental writers to any extent, being only now and then touched on in connection with other matters. Lacking the aid of authority I shall try to show its importance in daily practice and, at the same time, ask our members to look more attentively into their cases and see if the work of one of us is not worthy of more concentrated effort on our part earnestly to trace the subject better. I refer to the teachings and papers of the secretary of the Section, Dr. E. S. Talbot, than whom no one has done more to bring together this joint work of the stomatologist and physician in systemic treatment for oral conditions.

Who have better opportunities for observing the detrimental effect of a brain-cramming system of education at the expense of the bony and muscular systems than the wide-awake stomatologists?

"Why do my children's teeth decay so young?" is a common question. "I never had a tooth filled until I was 20 years old or more," says the questioner.

Look at the child with her small, delicate frame with large head, bright eyes and a highly exalted nervous system. We are told that she is ready for high school at 13 and began day school at 4½; she does not care for sports, sits up till 9 or 10, or later, with some neighbor children, and spends three to five hours a day practicing, which excites rather than soothes the nervous system. The amusements seem to be visiting other children, fudge parties, with late suppers and later hours for retiring, and consequently too little sleep; dancing lessons on Saturday and going to the city for a matinee. It is one perpetual round of excitement, with no time for the daily care of the body, including the teeth, or assistance in the home duties, and far less desire to please others or be helpful to anyone but the child's immediate circle. The tendency of the times with the immense struggle to keep the family provided for, the extremes in dress and fashions, the daily routine excitement with seldom a moment for relaxation, cannot help but ruin the finest heritage given to man, the vital structures by which his health, wealth, strength and happiness must be secured.

Prophylaxis—preventive medicine or hygiene—comes first and far above the mechanical art of dentistry, which is overdone. The crying demand of the nerves, however weak they are, to continue reacting by stimulation or excesses in food, drinks and automobiling, is fast developing a new set of disorders in vision, bones, muscles and heart strain, to say nothing of the nervous system. A recent recommendation of the use of the automobile (which to-day is seldom anything but a means for securing distance or speed instead of rest, tranquillity and change), in lung and heart diseases as a curative agent, should be carefully considered before it is accepted. The increase in neuralgia, or so-called neurotic pains, is well known and with the present ill-devised clothing it is no wonder that the speed and wind force should cause concussion and congestions with inflammatory conditions of the various parts of the body and especially the teeth. Again, the hurried meals at roadhouses, excessive in many cases for the immediate needs, on account of the increased oxygen inhalation and faulty elimination, must cause auto-intoxication, and many patients admit this when complaining of vague neuralgic pains or backache. The present urging of very young people into business positions of responsibility is a detriment to many; their hurry to escape the uncongenial atmosphere of the study rooms, and their almost universal carelessness in attending to their daily wants become a matter for thought. Austin Flint says: "The inexorable law of the survival of the fittest applies to man educated or uneducated, as well as to the lower animals, and it seems useless to educate man for work which he is physically unable to perform." The present rush to finish school work allows no extra time, as a rule, for broadening out in other lines, because time and money outweigh the study.

It should be remembered that the child consumes twice as much oxygen as the adult; and throws off a corresponding amount of carbonic acid; this is a gauge of its muscular activity and thus shows the need of the growing child for pure air in plenty. All muscular exertion is an expenditure of nervous force, hence, severe mental exertion and heavy physical strain should not be undertaken at the same time. Why should children not be forced to brain activity in tender years? Because, first, the brain grows most rapidly before the seventh year; secondly, the child is called on to assimilate and appropriate enough to nourish its rapidly growing brain and body, and at the same time to make good the wear and tear of its active nature. Is it not expecting too much of the digestive apparatus of the child to furnish material for its bodily development and, while so doing to supply food for an adult brain? Can we expect an overworked and excited child to digest its food properly and to furnish perfect material on which to feed its starving tissues? The food question of to-day is a real one in view of the extreme notions in children in regard to what they must eat, especially their repugnance to green vegetables.

Is it any wonder that the first seven years constitute a period of stress, with the brain growth, dentition, disorders incidental to infections and other childhood diseases? The rapid and great increase in the need for orthodontia, adenoid and nasal operations, the choreic cases, disorders of vision and digestion, etc., are evidence of this. Any mental strain shows itself on the teeth by increased caries as well as increased sensibility of the dentine, and especially as a cause for gingivitis and its allies, alveolitis and pyorrhea. Overwork of any vascular part such as the overtraining of the muscles for athletic contests, will give like results on the teeth. Mental shocks are also a serious menace to general and dental health. When brain activity is forced, a loss occurs to the system and it is called on to restore the requisite amount of phosphorus.[1] This is a vital component of

* Read in the Section on Stomatology of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

1. A measure which has proved useful in bony suppurations and alveolitis is the internal administration of ethereal tincture of phosphorus (1 to 1,000) 3 minims after each meal, well diluted with water. If much pyorrheal infection be present, but the teeth sound, the above remedy followed by solution of mercuric chlorid (1 to 1,000) three minims between meals, is worthy of more trial. At the same time the gums should be painted with Dr. E. S. Talbot's iodin and glycerin mixture, or twice daily, anteriorly and posteriorly, with a dilution of iodin liniment (B. P.) made by adding to 2 drams of liniment water to make 4 ounces. In cases of adults in whom there is much gastric flatulence and pain showing intestinal autointoxication, as well as in the infantile form of digestive disturbance, silicate of sodium acts nicely as a sedative and antiferment. Sodium silicate 172 gm., dissolved in 1 liter of water, to which a trace of fluosilicate of magnesia and carbonate of lithium has been added, may be given in doses of one to two teaspoonfuls three times daily before food, according to age and conditions present. Where the teeth are loose and very sensitive protargol in glycerole, used alone or with an electrode on an interrupted current, helps.

both brain and bone in nearly equal amounts; hence, we must not forget that small doses of phosphorus produce good results in the reproduction of bone and are therefore a useful adjunct in so-called pyorrheal treatment. Care must be taken in its administration lest it become a detriment instead of a help, and the cooperation with laxatives is necessary.

The condition of the oral cavity is a most important factor in surgery as an aid to antisepsis and sepsis.[2] The condition of the gingivæ being important to the physician as well as to the dentist, dentists should study and know what is the healthy normal appearance, and its examination should be undertaken regularly and thoroughly. For convenience we may classify the diseases into two groups:

The constitutional:

1. Interstitial gingivitis.
2. Syphilis—Leukoplakia.
3. Tuberculosis.
4. Scurvy.
5. Purpura hemorrhagica.
6. Diabetes mellitus.
7. Addison's disease.
8. Stomatitis (several forms.)
9. Noma.
10. Ludwig's angina.
11. Aphthae.
12. Herpes.
13. Metallic poisons (mercury, copper, lead, silver).
14. Rheumatism.

The local:

1. Traumatic inflammation.
2. Epulis, Fibroma, etc.
3. Polypi, simple hypertrophy.
4. Parulis or alveolar abscess.
5. Papillary and warty growths, chancres.
6. Vascular or nevoid growths.
7. General hypertrophy, hyperplasia.
8. Carcinoma.
9. Sarcoma.
10. Gingivitis, interstitial alveolitis, pyorrhea.

Our training should be such that we can make a diagnosis of any case we may meet with, though it requires considerable experience to do this and book knowledge is a poor substitute for the latter. Many of these diseases dentists are often called on to treat, and others, when diagnosed, perhaps should be handled by a general practitioner. If the stomatologist has been trained as it is his right to be, he can and should take care of these cases or (what is not always satisfactory) work in conjunction with the family physician. The earlier the cases are seen the better, and here, the dentist can do good and save life and valuable time in treating such confusing symptoms as gumma, tuberculosis and neoplasms.

The debated question in the treatment of abscessed teeth—when not to extract—is one still in doubt. Why pus should be allowed to stay doing damage by its burrowing and sepsis in the mouth any more than in any other part of the body, seems a conundrum in these days of thorough surgical treatment. The danger of lymphatic infection, necrosis of soft tissue and bone is not to be lightly passed over, to say nothing of the general condition of the patient. An alveolar abscess does not always burst into the labio-dental sulcus; it is more common for those attached to the upper lateral teeth and the palatine roots of molars to burst into the palate. Abscesses on the lower teeth sometimes pierce the inner alveolar plate and burst into the cavum oris. From the lower teeth pus may pass inward through the bone, or between the bone and its periosteum and point under the chin or among the fasciæ of the neck, whence it may reach the thorax, and in its course cause the diseases known as angina Ludovici and edema of the glottis. From a molar tooth the pus may extend along the jaw into the pterygoid region, the temporomandibular articulation, or masseter muscle, and from these may reach the brain or ear. I have seen pus soaking backward from upper incisors, cuspids, and molar palatine roots discharging into the nasal floor, the antral cavity and cheek, forming a retropharyngeal abscess.

Ulcerative stomatitis is not a pleasant disease to deal with, especially if the patient is not of a vigorous type, and the disease is not usually found, unless by direct infection, in robust people. In adults and after exanthematous fevers in children it is more often seen, and may arise from impure milk and unhygienic surroundings. The infection almost always takes place at the necks of the teeth, causing an acute gingivitis, but, as the germs multiply and spread, it develops from a hyperemia to thrombosis of the vessels, molecular disintegration or ulceration of the gum, and, eventually, of the periosteum and alveoli. The more acute the case, the larger will be the sloughs and the deeper the necrosis. At the same time the absorption of the products of putrefaction will cause pyrexia, sapremia and even, eventually, death. The picture as presented by the gums in this condition is too well known to consider here, but it will be a wise precaution to examine such ulcerations to determine the bacterial flora[2] which is not only a wise precaution but a just one for the patient and stomatologist. My own experience has taught me that ulcerative gingivæ may have various bacteria of their own which, on general examination, without a microscopic smear or culture, would never have been thought of. One case I remember especially in which the smear gave a typical pure pneumococcal slide, and the patient died four days later of an acute lobar pneumonia, the whole pharynx and lung showing the membranous exudate of the same type, and inoculations of the blood in guinea-pigs showing the same characters. Another patient, who had a chicken-raising business and whom I saw in consultation, presented a condition allied to noma, the whole of the oral cavity being one mass of membrane of a greenish-white color and the lips so swollen as to be almost indefinable. The lower lip especially, was of a blackish gangrenous color, extending to the chin. The temperature was 105 F., yet the patient tried to do her work under great difficulties until she became delirious, with sweating accompanied by violent rigors and chilliness. In this case, in which the etiologic factor was not clear, the patient may have been accidentally inoculated through a hen flying up and picking her face when feeding or being lifted off the nest, as the patient remembered several such instances; or it may have been a dental infection, as her mouth was sadly lacking in hygiene. Bacterial work then was not what it is now, or I think serum treatment would have been a great help and less tedious and difficult convalescence would have been endured. The extreme sepsis and circulatory disturbance that the patient suffered, together with the general debility and metastatic abscesses in the liver, leg and arm, rendered the prognosis very grave. Luckily, it is not a very com-

2. Latham, V. A.: Dental Digest, February, 1906, p. 127; Differential Diagnosis in Dentistry, Dental Register, 1895, p. 469; Am. Med. Jour., July, 1905.

mon condition, but I have seen enough cases to make me fear the results, both from the point of view of cosmetic effects and from that of recovery. Though ulcerative stomatitis usually occurs in children, still adults are affected and it is likely to be confused with a more recently discovered disease, that is, Vincent's angina.

As in many other diseases of the oral tissues, it is thought that certain micro-organisms play a conspicuous part in the rôle of this disease. Froriep[3] first called attention to the organisms resembling yeast fungi. Gravitz[4] found bacilli in nearly pure cultures, which were described by Loeffler[5] as similar to the bacillus seen in diphtheria of calves. Other investigations have confirmed the finding of this germ. In every case a bit of the exudate should be obtained with a sterile instrument and cultures taken and smears made for immediate diagnosis, which in a few minutes can easily be made, as no cumbersome laboratory stains are needed when the "soloids" can be had, and fresh solutions made from the tablets, as wanted; uniform results can be secured in a moment. If the diphtheria germ is present, a physician can be called and antitoxin administered without delay. In streptococcic infections of a high degree, with much depression, serum inoculations are a great aid in cutting short the disease; also, in some pyorrheal cases, if the infection is a pure and not mixed type. When the smear shows a spirillum type, we know we shall not succeed in cutting short the case without most vigorous therapeutic measures. The following case, which occurred last fall in my practice, may interest some stomatologists; it shows the conditions very clearly:

*History.*—The patient was a young man, aged 20 years, a student of good habits, a moderate smoker and a good athlete. He had been ailing for a month, had been under the care of several physicians and dentists, and was treated with caustics, gargles, etc. As the young man was getting worse, showing signs of rapid loss in weight, anemia, great pain on swallowing, and could not eat, his parents became alarmed and saw a prominent surgeon and, then, a throat specialist. Finally, the patient came into my care.

*Examination.*—The patient was almost prostrated from the effort of walking a block and a half from the street-car, being breathless and very fatigued; he was sweating profusely; the pulse was 125, very weak and irregular; the temperature was 104 F. The breath was exceedingly offensive; the lips were swollen and it was nearly impossible to open the mouth to see the cavity and fauces. The mucous membranes were covered with a grayish-greenish deposit and bled on the slightest touch. The gingivæ from molar to molar in both lower and upper jaw were ulcerated, especially, around the right and left superior centrals (pivot) teeth and laterals. The centrals had the gum ulcerated to one third of the apex of the roots. The gum about the left lateral on the palatal position was so swollen that the patient could not shut the teeth as he bit. A deep, wide pocket came from this oozing blood and pus. The right superior molar was very much diseased and there was a large plaque of dead skin on the buccal surface. The tongue protruded trembling and was swollen, fissured, bleeding and very heavily coated. The throat, which had been sore and had been treated as if the trouble were a simple tonsillitis, on my seeing it, did not look so bad as the oral cavity. The soft palate and uvula were slightly swollen and reddened; the left tonsil had some slimy, whitish membrane. The posterior fauces were very red and had follicular spots, but no membrane. The intense pain was from the swollen tongue and lips. Deglutition was nearly impossible and gargling very difficult and painful. Pain extended along the ramus to the right ear and up the side of the face, the submaxillary glands were tender, the head ached, the eyes were suffused and slight constipation was present.

*Treatment.*—I gave the patient a swabbing and took smears and cultures on agar and blood-serum, then carefully irrigated the mouth with a warm solution of 1 to 1,000 mercuric chlorid, later, with sterilized water; then, irrigated with alphozone solution in the strength of 1 to 50, swabbed with iodin and cleansed off the loose pieces. The patient was ordered malted milk with half cream in small quantities, and elixir digitalin compound. After a good compound cathartic pill, followed in the early morning with a laxative mineral water, the patient was kept in bed while the exhaustion was so marked, and the irrigations were kept up for 20 minutes at a time every four hours. After twenty-four hours, cupric sulphate was applied locally and washed off later; this seemed to exert a marked influence. Then liquid antiseptic washes were applied and tincture of iodin swabbed all over. Gargling and nasal douches were continued with free purgation. After three weeks the patient gained in weight and had only 99 degrees of temperature.

It was with the greatest difficulty that the disease was checked completely, for if the patient failed to attend to his swabbing and douching even for twenty-four hours, a fresh nidus would start on the superior premolar on the left side, then on the superior cuspid and on the mucous membrane of the cheek, and only constant watchfulness kept the disease in abeyance. The patient had a slight hacking cough. The lungs were good except for several small areas of broncho-pneumonia, and these yielded to bed and treatment. The extreme weakness of the patient was most marked and lasted for several months after the mouth was healed.

The diagnosis was not easy; the patient and his family all thought that the disease was a direct infection from the physician who treated the throat with some application, not silver, but what they did not know. The smears were of the greatest aid in making the diagnosis of Vincent's angina, and especially in differentiating between diphtheria and mixed infection. The ulcerative form of angina and stomatitis may be mistaken for secondary or primary syphilitic pharyngeal ulcers; it may be taken for the latter especially when it is accompanied by marked local glandular swelling. In the second set of smears from the reinfection there was a more suppurative condition. The findings in these mixed infections are never so characteristic as is usual in pure cases.

Usually the pathologic processes are so characterized clinically. This is particularly important since a great variety of bacteria are found on cultural examination of the tonsillar and pharyngeal deposit. With regard to this there is an urgent demand for a more thorough demonstration of the pathogenicity of spirilla and the fusiform bacilli. Again, the question of the occurrence of these micro-organisms in the oral cavity of healthy people is also of special interest. Miller has found them in healthy persons with carious teeth. Vincent * saw some on the gums and pharynx in fourteen out of eighteen healthy subjects examined, and Bernheim † also noted small numbers mixed with other bacteria. In order to determine their significance positively, the determination of their degree of virulence is needed. This, however, is difficult for either the fusiform bacillus or the spirillum, since, thus far unquestionably pure cultures, either by anaerobic or aerobic methods, have been unsuccessful. Nicolat and Marotte did get a marked increase in the number of fusiform bacilli and spirilla in the condensation

3. Froriep: Chirurgische Kupfertafeln, 1884.
4. Gravitz: Deutsch. med. Wchnschr., 1888, No. 15.
5. Loeffler: Deutsch. med. Wchnschr., 1889, No. 15.

* Vincent: Ann. de l'Inst. Pasteur, 1899, xiii.
† Bernheim; Ueber bacteriologischen Befund bei Stomatitis, 1898 xxiii, 177.

water of certain nutrient serum-media, but without pure culture. Bacteriologic proof of the pathogenicity of the spindle-shaped bacilli and spirilla has not, as yet, been positively given. Therefore, we must obtain more evidence by anatomic research or clinical observation. The bacilli penetrate deeply and, in new localities yield almost pure smears; hence, there is a danger of recurrent attacks.

One point to remember with regard to stomatitis is that it may follow a complication of a great number of more or less grave infectious conditions, or may occur in the course of good general health; and when one has to deal with patients in whom one may suppose a more or less abundant elimination of toxins or irritants by way of the secretions, one should always examine the mouths with care; very often more or less advanced lesions will be found. The uremic form of stomatitis is generally a serious condition; the fetor of the breath is very marked, strong and repulsive, even nauseating; the tongue is heavily coated white; when the renal symptoms are helped and the uremic intoxication clears, the inflammation of the buccal mucous membrane recovers quickly. Lancereaux, I believe, was the first to describe especially the buccal uremia and Barie first traced clearly the history of these particular symptoms. The saliva should be carefully tested in these cases for urea, which may be diminished or sometimes augmented. Barie had a patient who produced 900 gm. of saliva in twenty-four hours. As is well known, normal saliva always contains a certain quantity of urea, scarcely exceeding a few milligrams, or from 2 to 3 cg., exceptionally from 20 to 50 cg.; in the pathologic state, on the contrary, as in uremia 5 or 6, and even as much as 9 gm. of urea in twenty-four hours has been known; the patient produces almost as much urea in his saliva as in his urine. At present our bacteriologic investigation of the scrapings of the mucous membrane has only shown a few cocci, and what the real pathologic agent of the affection is, as well as the genesis we cannot say. Why the lower gums, particularly in the mouths of soldiers and smokers, are more prone to attacks of stomatitis, is a subject for thought.

A most valuable remedy for fetor of the breath and many forms of stomatitis which it always accompanies is oxygenated water for rinsing the mouths, on account of its tendency to kill out the anaerobic germs which seem to predominate and give the fetid odor and which have been so often noted in typhoid fever, erysipelas, auto-intoxication in the liver and intestinal cases, syphilis, eruptive fevers, infections, purpura and tuberculosis. The tongue has often been called the mirror of the stomach, and we may say that the mouth is the mirror of most of the infectious diseases and of the general intoxications of the body. This is especially true in conditions of anemia and other chronic diseases which, lately, in many countries, occurring in the practice of the physicians, have been referred to the dental specialist for a report on the existence of any septic conditions of the teeth that may be factors in the etiology, etc. I cannot do better than refer to the paper on anemia published by Dr. Walsh[6] in which one of the best summaries of the subject can be found. Who has not seen the anemia in children most probably due to necrosed roots and abscesses? Here is a point for discussion with the physicians and dentists as to when it is best to remove the teeth so as to avoid injury to the arch and teeth of both dentitions, and the best methods of treating such necrosed areas by the bismuth paste, etc. The work of Dr. W. Hunter has been noted in my address on oral sepsis[7] and pernicious anemia and its ally pyorrhea alveolaris before this Section. The various opinions on this latter subject, alone, are enough to make any reasonable man wish something could be done to bring order out of chaos. Mr. Henry Sewill[7] says that pyorrhea alveolaris has no connection with caries. To this I cannot agree, for caries is certainly to be found sooner or later. He says that it is a disease of middle life and old age only. I believe that most of the members here have seen it in all ages. If it is to be considered as a process of slow wasting of the alveoli and gradual shedding of the teeth, attended by slight inflammation and constant discharge of foul pus from within the free edge of the gum and alveolus, then we certainly can look for it in cases in which much hurried and forcible regulation has been done. I have seen many cases in which the superior lateral has been forced out from an included jaw and become the seat of a typical pyorrhea, so called, even of alveolitis and a suppurating pocket when every other tooth was in a perfect condition, unfilled, and the mouth well cared for. Those cases of long standing may cause us to wonder whether the pyorrhea has arisen from the lowered health or whether the lowered health has arisen from the depressing effect of the local disease.[8]

The great increase of crowning and bridge work which show poor mechanical judgment and poor reasoning has been, I sincerely believe, one of the greatest factors in the increase of this condition from the violent gingivitis and all its sequelæ which we find almost always present except in exceptional, careful, well-fitted cases by a master hand. Again, we must note that the etiologic factor in some cases consists in articulatory disturbances in both youth and advancing age, through the displacement or advancing of the mandibular angle so that it becomes obtuse, and through the loss of elasticity of the bones by the lime deposits; and thus the appearance of pyorrhea in different parts of the arch may possibly be explained.

As this paper has already exceeded my limited space I shall only call attention to the systemic points which are associated with oral sepsis as applied to mucous membranes. Dental caries may become the exciting cause of a multiplicity of the symptoms and is itself due to two principal causes: the anatomic location of the teeth and the polypathogenic part (if I may coin the term) played by the mouth bacteria. If the Loeffler bacillus and the tubercle bacillus each engenders but a single disease and is truly specific, it is not so with the staphylococcus and streptococcus, which according to their virulence, their mode of entrance into the body, the phagocytic power of the person attacked, their different modes of association, and, without doubt, many other conditions which we do not know, may start on the spot a circumscribed or diffuse suppuration, or may reach the lymphatics and cause an angioleukitis, an adenitis, adenophlegmon, or erysipelas and vast septic infiltrations of the cellular tissue, and may penetrate the veins as a phlebitis. Here they will deter-

6. Walsh, David: Some Points in the Modern Diagnosis and Treatment of Anemias, Med. Press and Circular, Sept. 24, 1902, p. 322.

7. Sewill, Henry: Med. Press and Circular, Oct. 22, 1902, p. 431.

8. Antral suppuration may occur from alveolar infection without the intervention of carious teeth. In cases of alveolar pyorrhea masses of granulation tissue seen on extracted teeth, on sectioning, show a rarefying osteitis spreading into the bone, while the tissue farthest away from the advancing inflammation shows fibrosis.

mine a regional symptom of a septicemia or abscess of the gravest character. The micro-organisms, if they act on the spot, first seek the alveolus (alveolodental periostitis) then the mandible (osteoperiostitis, osteomyelitis of the jaws), or conjointly bone and mucous lining. If they follow the contiguous tissues of the mouth, we get stenoparotiditis; if they penetrate through the alveolus of an upper tooth (first or second molar), maxillary sinusitis. If they pass on to the air-passages, bronchopneumonia follows. If they enter into the digestive apparatus they produce or help to produce in people subject to chronic abscessed teeth, anemia or so-called "dental cachexia" of Lejars,[9] or the acid putrid intoxication of Richet.[10] Everyone who has followed the clinical evolution of the lymphophlegmonous septicemia of the neck knows that it may be either simple septicemia or septic pyemia. If an incision is made in the phlegmonous parts, it is with great trouble that one will find in the deep parts a minute suppurating point containing only a dram or so of a secretion which may not be pus in character; or nothing at all may be found. Here is a clear proof that we must distrust surgical infections which do not suppurate. Suppuration may be a means of defense for the organism. In many of these severe cases death comes on very rapidly, the nerve centers being profoundly affected and not giving the brain time to react under the cellular intoxication, while the patient has a slight delirium, but depression irregularity and weakness of the pulse, respiratory insufficiency, dyspnea, toxins thrown off by sweats, diarrhea and albuminuria.

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### ABSTRACT OF DISCUSSION

DR. M. H. FLETCHER, Cincinnati: The thing that presents itself most forcibly to me is the lack of knowledge in parents of the laws of physiology. That is, the lack of proper knowledge of the conditions under which to bring up children, and from our view-point the mouth is very important. I have read in various works that the saliva of animals is strongly alkaline, but to go to the abattoir, apply a bit of litmus paper to the saliva of animals and find it change as quickly from acid to alkaline as it would be in a solution of bicarbonate of soda, and find this in absolutely every case, is something that should be considered by us. I take it that civilized environment has changed the physiology of man to almost the opposite condition. For it is a rare thing to find human saliva more than barely alkaline. Now, with the strong alkaline condition found in the mouths of animals, no acid decay could exist. Again, the eating of the rough food by these animals constantly rubbing against their gums, keeps the tissues healthy and strong. This feature is of great importance for there is a development of large rolls of connective tissue or callus at the necks of the teeth of these animals, especially just inside of the lower front teeth, where the food comes in contact with the mucous membrane. This is true in carnivora, where the teeth are conical, but not to the degree found in the herbivora; the biting with conical teeth also cleans them to the gums. When animals are kept from their normal diet and fed on civilized food, there is a marked delicacy or softening of the gums in consequence. I do not believe these points have been brought before our present generation strongly enough to impress them properly, and, since our teeth are not cleansed by our food, and our mouths do not have this protective alkaline saliva, by all means let us use the superior intelligence Providence has given us and give our gums this hard rubbing that they need, and the mouth and tongue the proper cleansing and the result will be to the development of healthy, strong gums and good teeth. Our intelligence should lead us to know where to begin and how to correct these defects; then we will know how to teach our children about them.

9. Lejars, Felix: Leçons de Chirurgie, Masson, Paris, 1895, p. 330.

10. Richet: De l'intoxication putride qui accompagne certaines fractures dites simples du maxillaire inférieur, Bull. Soc. de Chir., 1865, Series 2, iii, 410-431.

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## THE RELATION OF BLOOD PLATELETS TO HEMORRHAGIC DISEASE

### DESCRIPTION OF A METHOD FOR DETERMINING THE BLEEDING TIME AND COAGULATION TIME AND REPORT OF THREE CASES OF HEMORRHAGIC DISEASE RELIEVED BY TRANSFUSION *

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It is my purpose in this paper to report three cases and experiments which furnish additional evidence to show that the blood platelets play a part in stopping hemorrhage, and that one type of hemorrhagic disease may be attributed to an extreme reduction in the number of platelets. The cases possibly explain the relief which sometimes follows transfusion in hemorrhagic disease. It is my purpose also to describe a method for studying hemorrhage called the bleeding time, and to describe briefly a simple method for determining the coagulation time.

In the cases there was marked hemorrhagic diathesis, a normal coagulation time, and almost an absence of platelets. Transfusion was performed in each case. After transfusion there was a marked increase in the number of platelets and remarkable relief of hemorrhage. When the platelet counts returned to their previous low level, hemorrhages returned. Later in the course of the disease in two of the cases, the platelet count rose spontaneously and this rise also was followed by relief of hemorrhage. The cases are reported to show the marked dependence of pathologic hemorrhage in this type of disease on the reduced numbers of platelets. The experiments are reported briefly to show that platelet counts reduced experimentally by benzol are not associated with changes in the coagulability of the blood which account for the hemorrhages of the condition and suggest that this type of hemorrhagic diathesis is due directly to the lack of platelets.

#### A METHOD FOR DETERMINING THE BLEEDING TIME

A small cut is made in the lobe of the ear. At half-minute intervals the blood is blotted up on absorbent paper. This gives a series of blots of gradually decreasing size. Each blot represents one-half minute's outflow of blood. The rate of decrease in the size of the blots shows the rate of decrease of the hemorrhage. The cut should be made of such a size that the first half minute's outflow of blood makes a blot 1 or 2 cm. in diameter. The total duration of such a hemorrhage is called the bleeding time.

Figure 1 (A, B, C) was made from cuts of different size. These sets of blots show that within certain limits the duration of a hemorrhage does not depend on the size of the cut. If these figures represent capillary hem-

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

orrhages it is evident that a large number of capillaries will stop bleeding as rapidly as a small number.

The normal bleeding time varies from one to three minutes.

The bleeding time is slightly delayed (five to ten minutes) in severe anemia (Fig. 2).

Great delays in the bleeding time were found in, (1) cases in which the platelet count was excessively reduced (ten to ninety minutes—Fig. 3), (2) cases in which the fibrinogen content of the blood was excessively reduced (ten minutes to twelve hours), and (3) experimental animals in which both platelets and fibrinogen were reduced.

It is remarkable that the bleeding time is independent of the coagulation time. The bleeding time was normal in several cases of jaundice in which the coagulation time was very much delayed. Two of these patients died of pathologic hemorrhage.

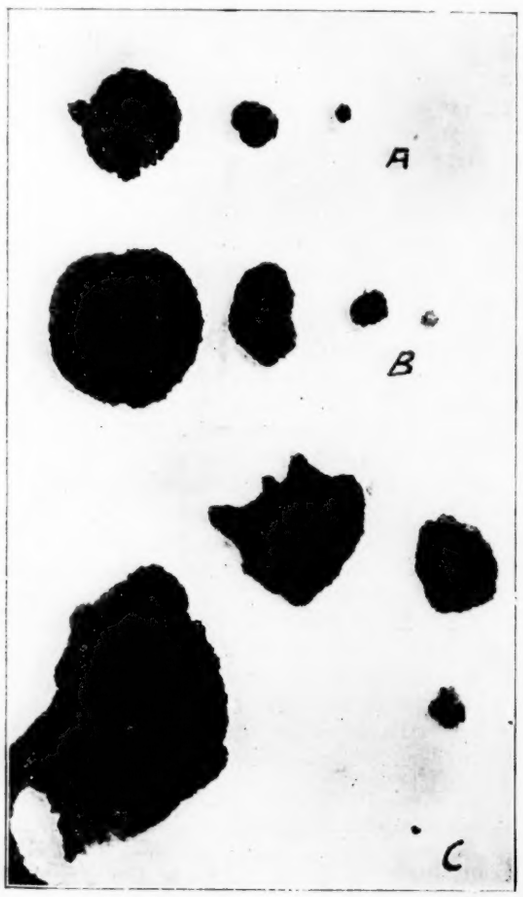


Fig. 1.—Normal bleeding times; A, from small cut; B, from larger cut; C, from very large cut.

It was also normal in a patient with hemophilia, who had a slight delay in the coagulation time and pathologic hemorrhage. The bleeding time was found to be normal in several types of purpura hemorrhagica in which the platelet counts were normal. It is difficult to explain why these patients had hemorrhage into the tissues, from mucous membranes, and from operation wounds, and at the same time had normal bleeding from ear-pricks.

The bleeding time, then, in types of disease associated with low platelet counts, or with a reduced quantity of fibrinogen shows a tendency to prolonged hemorrhage. In these types of disease, a delayed bleeding time is a more reliable indication of hemorrhagic diathesis than hemorrhagic symptoms, for such symptoms usually depend on general and local causes. The latter are, of course, not constant. In the cases reported in this paper the bleeding time was invariably delayed when pathologic hemorrhage was evident, and was often considerably delayed before hemorrhage began.

The method is apparently of no value in determining the tendency to bleed in jaundice and hemophilia, and in the types of purpura hemorrhagica which have normal platelet counts.

### A SIMPLE METHOD FOR DETERMINING THE COAGULATION TIME [1]

The apparatus consists of a slide on which are mounted two 5 mm. disks. One disk is covered with the blood to be tested. The other is covered with normal blood. The two drops of blood should be of about the same depth. The slide is then inverted over a glass nearly full of water kept at 40 C. and is covered with a warm, damp cloth. The coagulation time is determined by holding the slide in a vertical position for a moment. When the end point is reached the drop does not hang, as in Figure 4 *a*, but retains the contour of a perfect sphere

Fig. 2.—Slightly delayed bleeding time. From a case of secondary anemia.

(Fig. 4 *b*). The end point appears sharply and is easily determined.

The normal coagulation time by this method varies from five to seven minutes. A very shallow drop clots one to two minutes sooner than a very deep one. The normal blood can be used for a control, or can be used for obtaining a comparative time.

If simply the comparative time is desired, the temperature of the water may be allowed to vary between 35 and 40 C., and the glass may be covered with the hand instead of a damp cloth. A delay of two minutes can be easily determined by this method.

### PLATELET COUNTS

Wright's method[2] was used in making the platelet counts. According to this method the blood is drawn up in a 1-100 pipette, mixed with a solution of cresyl blue and potassium cyanid and counted by the red cell

1. This method is a modification of Hinman and Sladen's slide method (Johns Hopkins Hosp. Bull., 1907, xviii, 207). The principle was first used by Milian.

2. Wright and Kinnicut: Tr. Assn. Am. Phys., May, 1910.

technic. The red cells are laked by this solution and the leukocytes and platelets are stained. This is a great advantage, for the platelets can be easily recognized and can be counted with a high dry lens. The counts made by this method are uniformly lower than those made by Pratt's method.[3] This method, however, gives constant results if care is used in the technic. The normal count, according to Wright and Kinnicut, varies from 250,000 to 400,000.

TABLE 1.—CASES OF HEMORRHAGIC DISEASE IN WHICH THE PLATELET COUNT, COAGULATION TIME AND BLEEDING TIME WERE DETERMINED

| Disease. | No. of Cases. | Symptoms. | Plate Count. | Coag. Time. | Fibrinogen Content of Blood. | Bleeding Time. | Other Diseases which may Give Similar Blood and Similar Symptoms. |
|---|---|---|---|---|---|---|---|
| Idiopathic purpura hemorrhagica. | 3 | Purpura, spontaneous hemorrhages. | Below 20,000... | Normal... | ..... | 60 min.+ | Penicious anemia, lymphocytic leukemia, nephritis, typhoid fever. |
| Aplastic anemia..... | 2 | Ecchymoses, epistaxis..... | Low. ..... | Normal... | Nor. in experimental aplastic anemia. | Delayed. | |
| Chronic Ulcerative colitis. | 1 | Melena..... | 20,000 to 30,000 | Normal... | ..... | 10-20 min. | |
| Chloroform poisoning..... | Dogs. 3 | Bleeding from gums and operation wounds. | Normal or slightly reduced. | Normal... | Excessively reduced. | Hours.... | Phosphorus poisoning, hemorrhagic smallpox. |
| Jaundice.. ..... | 2 | Hemorrhage after operation. | Adundant in smears. | 30 min.. .. 40 min. ... | ..... | 1-2 min.... | |
| | 1 | Purpura hemorrhagica.... | 350,000. ..... | 8 min. .... | Probably normal in jaundice. | 3 min..... | |
| | 8 | No symptoms..... | Abundant in smears. | Nor. or delayed. | ..... | 1-3 min... | |
| Hemophilia..... | 1 | Bleeding from wound; hematoma in knee. | 350,000..... | 9 min. .... | Normal in hemophilia. | 2 min..... | |
| Purpura simplex..... | 2 | Purpura..... | Abundant in smears. | Normal... | ..... | Normal... | |
| Henoch's purpura..... | 1 | Purpura, intestinal crisis, melena. | 275,000..... | Normal... | ..... | Normal... | |
| | 1 | Purpura, urticaria, angioneurotic edema. | 300,000..... | Normal... | ..... | Normal... | |
| Nephritis. ..... | 4 | Epistaxis..... | Abundant in smears. | Normal... | ..... | Normal... | |
| | 1 | Ecchymoses ..... | | | | | |

TABLE 2.—DETAILED FINDINGS IN CASE 1

| Date. | Platelet Counts. | Plates in Stained Blood Smears. | Bleeding Time. (Minutes.) | Coagulation Time. | Urine. | Stools. | Epistaxis. |
|---|---|---|---|---|---|---|---|
| May 8..... | 6,000. ..... | 1-2 per smear..... | 47 | 5 minutes..... | Smoky..... | Tarry..... | Moderate. |
| May 9..... | None seen..... | None seen..... | 90 | 5 minutes..... | Smoky..... | Tarry..... | Moderate. |
| May 10..... | 3,000. ..... | ..... | ..... | 5 minutes..... | Smoky..... | Tarry..... | Moderate. |
| May 11..... | ..... | 2 per smear ..... | 50 + | 4½-5 minutes .... | Smoky..... | Tarry.. ..... | Extreme. |
| (Transfusions). | | | | | | | |
| May 12..... | 123,000. ..... | 1-3 in each field. | 3 | 4½ minutes..... | Clear..... | Tarry.. ..... | None. |
| May 13..... | ..... | 1 in 3-4 fields..... | 3 | ..... | ..... | Yellow. ..... | None. |
| May 14..... | ..... | ..... | 30 | ..... | Clear..... | ..... | None. |
| May 15..... | ..... | 3 per smear..... | 40 | ..... | Clear..... | Occult blood. | Slight. |
| May 16..... | ..... | 1 per smear ..... | 50 | 5 minutes..... | ..... | ..... | Moderate. |
| May 17..... | 1,500..... | 3 per smear..... | 50 | ..... | Clear..... | Fresh blood. | Moderate. |
| (Spontaneous increase in the number of platelets). | | | | | | | |
| May 18..... | ..... | ..... | ..... | ..... | ..... | Occult blood. | None. |
| May 19..... | ..... | 1-6 per field ..... | 2 | ..... | ..... | ..... | None. |
| May 23..... | ..... | ..... | 2 | 5 minutes..... | Clear..... | No blood..... | None. |
| May 24..... | 84,000.. ..... | 3-8 per field..... | 4 | ..... | ..... | ..... | None. |

BLOOD EXAMINATION

May 8, R. C., 3,264,000; Hbg., 50%; W. C., 5,000
May 10, R. C., 3,260,000; Hbg., 50%.
May 11, R. C., 2,700,000; Hbg., 40%; W. C., 7,000
May 12, R. C., 3,600,000; Hbg., 46%
May 14, R. C., 3,500,000; Hbg.
May 16, R. C., 3,444,000; Hbg., 55%; W. C., 6,000
May 24, R. C., 5,000,000; Hbg., 70%; W. C., 2,400

## REPORTS OF CASES*

CASE 1.—*Summary.*—Acute purpura hemorrhagica. Purpura; spontaneous hemorrhages; practical absence of platelets; delayed bleeding time; normal coagulation time. This case is of interest in showing relief of hemorrhage, both after the rise in the platelet count following transfusion, and after a spontaneous rise in the count which occurred later in the disease.

*History.*—S. M., a man aged 20, Armenian, tailor, was admitted to Massachusetts General Hospital May 8, 1909, complaining of epistaxis. The family history is negative for hemorrhagic disease. The patient has always been strong and well, and has had no serious illnesses. He has never had prolonged epistaxis, spontaneous ecchymoses, joint trouble, urticaria, nor abdominal crises. His digestion has always been good. For three weeks before admission to the hospital he had been feeling run down, and had had slight sore throat. For five days he had been troubled with persistent epistaxis. He noticed that his urine was high-colored, his stools black, and that he was covered with purpuric rash. There was nothing further of importance in the history.

*Examination.*—The patient was a well-developed and well-nourished young man, pale and weakened by loss of blood. A small amount of blood was then oozing from the border of his gums, and nasal mucous membranes. Scattered over his entire body, including the soles of his feet, mucous membranes, tongue, and scleræ, were fine muscular purpuric blotches, 1 to 5 mm. in diameter. In places, especially on the lower extremities, they were confluent, and covered areas 2 to 3 cm. in diameter. Retinæ were free from hemorrhage. There were a

3. Pratt, J. H.: A Critical Study of the Various Methods Employed for Enumerating Blood Platelets, THE JOURNAL A. M. A., Dec. 30, 1905, p. 1999.

4. I wish to express my thanks to Dr. F. T. Murphy, Dr. Hugh Cabot, Dr. L. A. Conner and Dr. R. D. McClure for permission to report these cases, and to Dr. J. H. Wright for his kind assistance in making the platelet counts.

few mucous râles at the lung apices, and a soft systolic blow at the base of the heart. The spleen edge was palpable just below the costal margin. There were no telangiectases on his skin or mucous membranes. Blood-smears showed almost a total absence of blood-plates, 6,000 by count. On the following day the counts were even lower. The bleeding time was forty minutes. The coagulation time was normal.

The course of disease can be followed by the chart (Fig. 5). During the first four days in the hospital there was an almost constant oozing of blood from the nose, which could be controlled for only short periods of time by packing. The stools and urine each day contained considerable blood.

*Transfusion.*—On May 11, the patient lost over a pint of blood from the nose, and his condition became so critical that he was transfused at 2 a. m. by Dr. F. T. Murphy. An Armenian friend of about the same age was donor. That a large amount of blood was given by transfusion was evident from the improvement in the patient's general condition, color, and pulse, and from the rise in the pulse-rate of the donor.

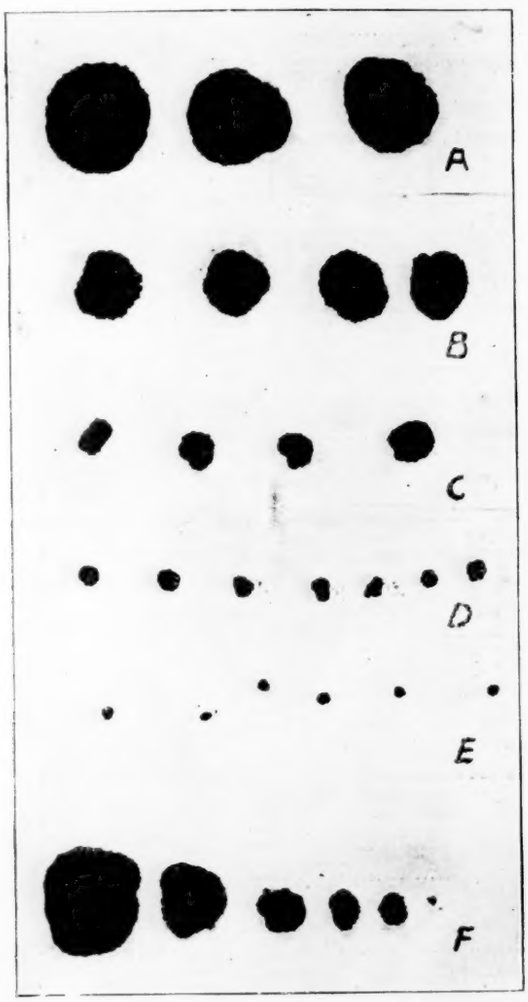


Fig. 3.—Great delay in bleeding time. From Case 1. Platelet count 3,000, coagulation time normal. The blots in Series A were taken immediately after the ear was pricked; Series B, 20 minutes; C, 40 minutes; D, 60 minutes, and E, 80 minutes later. The bleeding time at this time was 90 minutes. Series F, showing a normal bleeding time, was taken after the transfusion. Platelet count was then 110,000.

*Course of Disease.*—The platelet count, taken six hours after transfusion, was 123,000. The bleeding time had dropped to three minutes. The coagulation time was practically unchanged. Epistaxis had stopped before this time, and the packing had been removed from the nose. The urine was then free from blood. The stools on the following morning were light yellow, but contained a small amount of occult blood. No fresh purpuric spots appeared and the ones present began to fade, disappearing completely in five days. Thirty-six hours after transfusion it could be seen from stained smears that the platelets were decreasing rapidly in number, and on the third day one could be found only after prolonged search. At this time the bleeding time was again delayed. The day following this the patient's nose began to bleed and fresh blood appeared in the stools. Since the onset of the disease the patient had had an irregular temperature, varying from 99 to 103 F. This came to normal, except for slight remissions, on May 20. Apparently the disease had run its course, for at this time plates reappeared in the blood (80,000), and hemorrhage from ear-pricks would last for only three minutes. There was no further epistaxis or melena. Convalescence was uneventful, and since then the patient has continued his vocation without symptoms.

*Differential Counts.*—Made on May 8, 9, 12, 15, 23. Polymorphonuclear neutrophils made up from 80 to 86 per cent. of the cells. The remainder were lymphocytes with an occasional mast-cell and eosinophil. Only one blast was seen.

*Red Cells.*—Moderate variation in size. Shape normal. Moderate amount of achroma and polychromatophilia. An occasional stippled cell.

*Coagulation Time.*—The comparative method was used. The temperature was kept constant at 40 C. My blood, which had a coagulation time of five to six minutes, was used as a control. Usually several determinations were made and the average taken.

*Platelet Counts.*—Pratt's method was used in making the platelet counts on May 8, 9 and 10. The other determinations were made by Wright's method. The variations in the platelet count were so marked that estimations from stained cover-glass preparations of the blood proved satisfactory. Smears were looked over carefully with oil immersion lens on the days mentioned, and the number seen per smear or field averaged.

*Retraction of Clot.*—The clot was non-retractile after standing forty-eight hours on May 11 and 16. It retracted normally on May 12 and May 23.

*Bleeding Time.*—Determined by the method described. As a rule several determinations were made and the times averaged.

*Urine.*—Normal except that it contained a sediment of red cells and a slight trace of albumin on May 8 to 11. It contained no sugar, bile, peptone, albuminose, or nucleoproteid.

*Stools.*—May 8 to 12, rather copious, soft and black; from May 13 to 16, soft and light yellow (milk diet). Guaiac test was faintly positive on May 13 and 14; strong on May 15. On May 17, the stools were brown and soft and mixed with about 50 c.c. of fresh blood and a little mucus. On May 18, the stools gave the guaiac test. May 19 to 23, the guaiac test was negative. No parasites or ova were found.

The patient was seen eleven months after his illness and was then apparently strong and healthy. White count 4,700. Polymorphonuclears, 66 per cent.; lymphocytes, 34 per cent.; hemoglobin, 85 per cent. Plates 240,000. Bleeding time one minute.

CASE 2.—*Summary.*—Chronic ulcerative colitis; melena; reduced platelet count; delayed bleeding time; normal coagulation time. The bleeding time was normal after the rise in the platelet count following transfusion. The melena was slightly increased by transfusion. The case is of interest in showing a difference between the curative influence of transfusion in normal and in pathologic hemorrhage. Although the general tendency to hemorrhage (shown by the shortened bleeding time) was markedly diminished by transfusion, hemorrhage from the intestinal ulcers was increased. The case shows the difficulty of judging the tendency to abnormal hemorrhage by hemorrhagic symptoms alone.

*History.*—A. C., American, a boy aged 8, was admitted to Massachusetts General Hospital Nov. 15, 1909, complaining of weakness and diarrhea. The family history is negative for hemorrhagic disease. The patient's early life was normal. He had had no serious acute illnesses. After the age of 2 he suffered almost continually from diarrhea. He developed slowly, was always thin, and never strong enough to go to school. After the age of 4, there were four periods of a month or less in which the stools contained considerable blood, and the patient became pale and weak. He bled excessively from a trivial cut once. He never had ecchymosis on slight injury, joint disturbance, nor other evidence of hemorrhagic disease. For a month before admission to the hospital, the diarrhea was more severe, the stools contained blood, and the boy was becoming pale and weak.

*Examination.*—The patient was poorly developed, thin and pale, skin clear. Except for evidence of anemia, there was nothing of interest on physical examination. There were no telangiectases on the skin or mucous membranes, and no jaundice. Blood-smears showed a scarcity of the plates. Counts varied from 20,000 to 30,000. The bleeding time was twenty minutes. The coagulation time was normal.

During the first two and one-half weeks in the hospital a prominent symptom was diarrhea. The patient had from eight to thirty stools a day, which consisted mostly of thin pus, and often contained a small amount of blood and mucus. The patient's temperature varied from 98 to 103 F.

*Transfusion.*—On November 3 the patient was transfused by Dr. Hugh Cabot, preparatory to cecostomy. The child's father was donor. Following transfusion there was improvement in general condition and color. The temperature came to normal, and the pulse-rate dropped from 150 to 110.

*Course of Disease.*—The platelet count, taken two hours after transfusion, was 90,000, and the bleeding time was two minutes. The coagulation time was unchanged. The amount of blood in the stools, however, was increased. In interpreting this result it must be borne in mind that the patient had an extensive chronic ulcerative colitis (proved by autopsy), a condition which may cause melena when the blood is normal. The increase following transfusion was thought to be due to overfilling of the blood-vessels. Cecostomy was performed on the following day without excessive hemorrhage. As in the previous case, the platelets introduced by transfusion disappeared rapidly, and in a few days the count reached its former low level. The bleeding time again became delayed. The melena continued. The boy gradually became anemic, febrile, and died about a month later of septicemia.

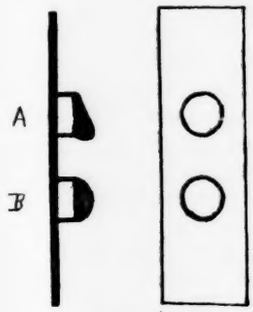


Fig. 4.—Instrument for determining the coagulation time.

*Autopsy.*—Chronic ulcerative colitis and enteritis. Extensive inflammatory thickening of the intestinal walls. Chronic pleuritis. Hyperplasia of mesenteric lymph-nodes. Streptococcus obtained from heart blood.

DETAILED FINDINGS IN CASE 2

| Date. | Platelet count. | Bleeding time (min.). | Coagulation time. |
|---|---|---|---|
| 10/26 ..... | 32,000 | 20 | Normal |
| 10/28 ..... | 23,000 | 20 | ..... |
| 10/30 ..... | 22,000 | 20 | Normal |
| 11/ 2 ..... (Transfusion). | 20,000 | 20 | 5 min. |
| 11/ 3 ..... | 89,000 | 3 | 5 min. |
| 11/ 4 ..... | 72,000 | 2½ | ..... |
| 11/ 6 ..... | 25,000 | 3 | Normal |
| 11/ 8 ..... | ..... | .. | ..... |
| 11/ 9 ..... | 25,000 | 10 | ..... |
| 11/13 ..... | ..... | 10 | ..... |

BLOOD EXAMINATION

| | | | |
|---|---|---|---|
| 10/15, R. C.....3,600,000 | Hbg., 42% | White Counts, 3,700 |
| 10/19, R. C.....1,600,000 | Hbg., 20% | White Counts, 3,100 |
| 10/31, R. C.....1,224,000 | Hbg., 15% | White Counts, 4,700 |
| 11/ 2, R. C.....1,200,000 | Hbg., .... | White Counts, .... |
| 11/ 3, morning.....3,280,000 | Hbg., 70% | White Counts, 3,800 |
| 11/ 3, afternoon ...3,416,000 | Hbg., ... | White Counts, 2,200 |
| 11/ 4, ..... | Hbg., 85% | |
| 11/ 9, ..... | Hbg., 90% | |
| 11/13, .....3,600,000 | Hbg., 70% | |

*Differential Counts.*—Polymorphonuclear neutrophils varied from 40 per cent. to 60 per cent. The remainder were lymphocytes with an occasional mast-cell and eosinophil. No blasts seen.

*Red Cells.*—Moderate variation in size. Shape normal. Moderate amount of achroma and polychromatophilia. No stippling.

*Coagulation and Bleeding Time.*—Determined as in Case 1. The platelets were counted by Wright's method.

*Retraction of Clot.*—On October 26 there was a very slight retraction of the clot after twenty-four hours; on November 3 and 4 a moderate amount of retraction; on November 9 no retraction.

*Urine.*—Normal.

*Stools.*—Eight to thirty a day, throughout the patient's illness. Small in amount and of pea-soup consistency. Stools contained considerable pus, a small amount of food residue and mucus. During the first few days, after admission, they contained considerable fresh blood. For ten days before transfusion they contained very little blood. After transfusion the stools were port-wine in color and contained considerable blood. Melena continued until death. Stools contained no parasites or ova. Cultures taken frequently showed only the colon bacillus.

CASE 3.—*Summary.*—Chronic purpura hemorrhagica[5]: Ecchymoses; purpura; hemorrhages from mucous membranes; low platelet count; delayed bleeding time; relief of hemorrhage for three days followed transfusion; relief of hemorrhage after a spontaneous rise in the platelet count.

*History.*—Georgiana ——, American, a girl aged 3, was admitted to New York Hospital Oct. 3, 1909, complaining of epistaxis. The patient's parents, and three brothers and sisters are living and well. There is no history of hemophilia in the family. The patient has had no acute illnesses. She has had prolapse of the rectum several times. Since the age of 19 months, she has been subject to nose bleed, and ecchymosis following slight injury. Four months before admission to the hospital, symptoms were more severe, and at one time she became pale and weak from epistaxis and bleeding from

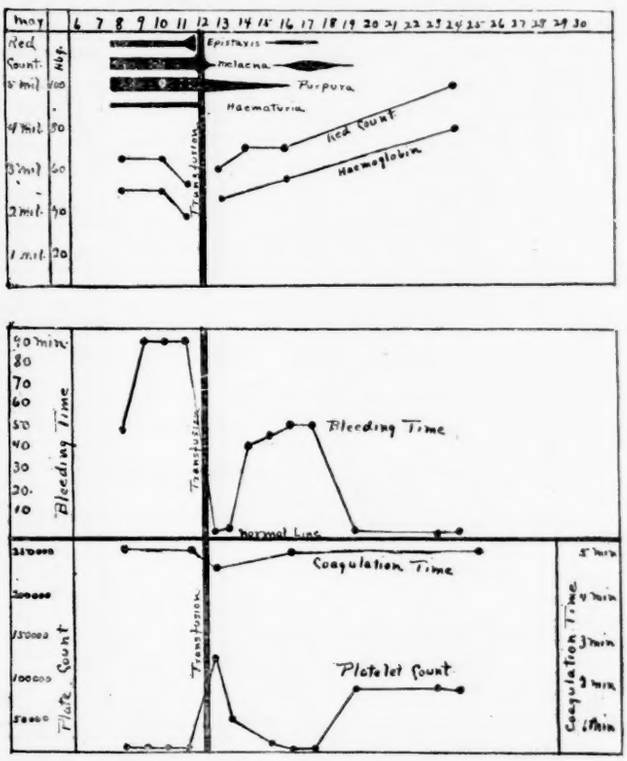


Fig. 5.—Chart of Case 1.

a small cut on the head. She improved somewhat after this, and for the following two months there was little bleeding. Two days before she came to the hospital, epistaxis began again and continued until admission to the hospital.

*Examination.*—The patient was a moderately developed and nourished little girl. She was pale and rather weak from loss of blood. On the right shoulder, cheek, and lower extremities were several small ecchymoses. There were no telangiectases. The physical examination was otherwise unimportant. Epistaxis continued almost without ceasing for five days, and the child became almost pulseless.

*Transfusion.*—She was transfused on October 7 by Dr. R. D. McClure. The patient's father was donor.

*Course of Disease.*—Transfusion improved the patient's pulse—volume and color, but owing to bronchopneumonia, which developed at about the same time, her condition remained serious for a few days. The temperature, which had ranged from 98 to 102 F., began to decrease and reached

5. This case has been reported in another connection by Pool and McClure, Annals of Surgery, September, 1910.

normal about a week later. The pulse-rate immediately dropped from 160 to 120 and a few days later to 90, where it remained. There was no bleeding for three days after transfusion. On the fourth day there was slight epistaxis, and hemorrhage from the vagina and transfusion wounds. Later, she had slight epistaxis and melena, as marked on the chart, and a fine petechial rash which followed straining at stool.

*Blood Examinations.*—August 8—red cells 2,300,000, hemoglobin 34 per cent. Other estimations showed about the same ratio between the red count and hemoglobin. The white count varied from 16,000 to 21,000. Blood smears on some occasions showed an excess of lymphocytes (71 per cent.), but usually polymorphs predominated. The red cells showed polychromatophilia and moderate variation in size. There were no blasts. The coagulation time was about normal (Boggs' instrument). The urine was not remarkable.

For five weeks after leaving the hospital the patient had no further bleeding. During the sixth week, however, she had prolapse of the rectum with bloody stools. One week later, she noticed that ecchymoses followed slight injuries. When seen at this time, (Nov 24, 1909), her color and general health were fairly good. On her head, elbow and legs, were several small ecchymoses. Blood plates, as determined from stained smears and counting chamber, were extremely scarce. The bleeding time was about sixty minutes. The coagulation time was normal. The clot was firm and non-retractile. The white count was 7,000; polynuclears, 45 per cent.; lymphocytes, 55 per cent.; hemoglobin, 90 per cent. The patient was seen again four months later (April 7, 1910). She had been free from hemorrhagic symptoms for some time. Plates were then abundant in stained smears, and hemorrhage from ear pricks would last for from five to ten minutes. The hemoglobin was 85 per cent.

Platelet counts were not made in this case at the time of transfusion. It seems probable, however, that, as in the previous cases, the relief of hemorrhage, after transfusion, was associated with an increase in the platelet count.

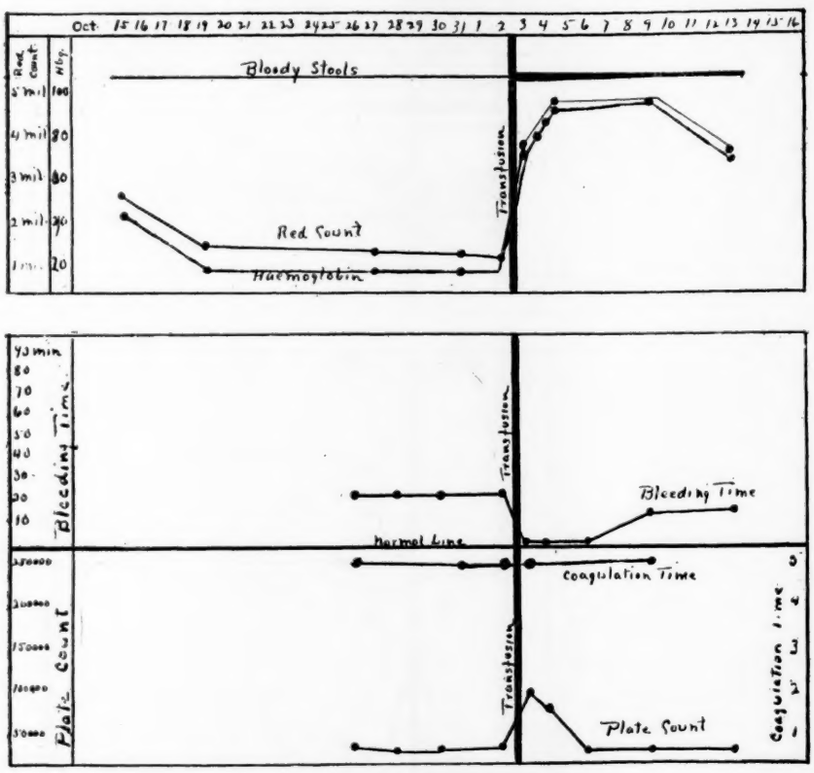


Fig. 6.—Chart of Case 2.

## COMMENT

A review of the cases shows a striking dependence of hemorrhagic diathesis on the reduced number of platelets. In Cases 1 and 2 the platelet counts before transfusion were 3,000 and 20,000; the bleeding times were, respectively, ninety and twenty minutes. After transfusion the counts were 110,000 and 89,000, and the bleeding time in each case was three minutes. After the disappearance of these platelets, apparently introduced into the patients' circulation by transfusion, the bleeding times were again delayed (forty minutes and twenty minutes). In Cases 1 and 3 the bleeding times (forty minutes and one hour) came to normal after spontaneous rises in the platelet counts.

As to spontaneous hemorrhages, there was complete relief in Cases 1 and 3 for three days after transfusion and after spontaneous rises in the platelet counts. In Case 2 intestinal hemorrhage was slightly increased by transfusion, in spite of the fact that the general tendency to bleed (shown by the shortening of the bleeding time) was less marked. This apparently contradictory result may be accounted for by the fact that intestinal hemorrhage in this case was not entirely pathologic hemorrhage, but was due largely to bleeding from intestinal ulcers. The increase after transfusion may have followed the more complete filling of the blood-vessels.

In each of the cases the coagulation time of the blood bore no relation either to the platelet count or to hemorrhagic symptoms. The coagulation time was practically the same before and after transfusion, and before and after the spontaneous rises in the platelet count.

Other cases of hemorrhagic disease with a reduced number of platelets (twenty) have been reported by Denys, Hayem, Ehrlich, Helber, Bensaude and Rivet, Coe, Pratt and Selling. In one case reported by Bensaude and Rivet[6] there was a low count (6,000) during a hemorrhage crisis. During a remission in the disease the count was 161,000. Coe[7] has attached more importance to the relationship between the reduced number of platelets and hemorrhage than other observers. In one of his cases, the most severe epistaxis occurred when the platelets, estimated from stained smears, were almost absent. Previously they had been present, but in diminished number. In another case of purpura hemorrhagica, platelets, frequently estimated from smears, were almost absent during two hemorrhagic periods, and were present during remissions.

The reported cases differ in etiology. Many belong to the group known as idiopathic purpura hemorrhagica. Some of the cases were evidently symptomatic. One of Pratt's cases[8] accompanied nephritis. The platelet count was 9,000. Benzol poisoning was the etiologic agent in Selling's cases. The clinical condition was aplastic anemia. In one of his cases the platelet count was 2,500. In Case 2 reported in this paper, the hemorrhagic diathesis may have been secondary to ulcerative colitis. Plate-

6. Arch. gén de méd., 1905, I, 193.
7. Coe, J. W.: The Treatment of Purpuric Conditions and Hemophilia, THE JOURNAL A. M. A., Oct. 6, 1906, p. 1090.
8. Osler's Modern Medicine, 1908, iv.

let counts may also be low in lymphocytic leukemia, pernicious anemia, and early typhoid fever, and in each disease purpura hemorrhagica is a recognized complication.

The data leads one to believe that a reduced number of platelets is not simply a phenomenon accompanying some types of hemorrhagic disease, but rather that it may be the direct cause of hemorrhagic diathesis in several diseases.

## EXPERIMENTAL WORK

Experimental work seemed desirable to determine whether the hemorrhagic diathesis was due directly to the lack of platelets, or whether it was due to an abnormal coagulability of the blood which might accompany a reduced number of platelets. It seemed desirable also to know to what extent the platelet count must be reduced to cause hemorrhage.

In benzol poisoning we have a condition simulating idiopathic purpura hemorrhagica. Santessin[9] has reported cases and experiments in which hemorrhages were produced by benzol. Selling's cases[10] of a similar nature clinically, had very low platelet counts. He has found[11] that subcutaneous injections of benzol in animals reduces the platelet count. This reduction is thought to be due largely to the aplastic condition of the bone-marrow caused by the poison.

My experiments were performed mainly on dogs, and, according to a method suggested by Dr. Selling. Benzol was given daily for six to twelve days. The platelet count would usually rise at first, but later would fall and continue low for a number of days after the injections of benzol had been stopped. In several instances the count was reduced to 30,000. The white count was usually high even in the late stages of the poisoning.

The results[12] support a conclusion which might be drawn from this series of cases, namely, that when other conditions are normal, moderately low platelet counts are not associated with hemorrhagic diathesis. The platelet counts, after transfusion, in Cases 1 and 2 were only one-third of the normal, and yet there was no evidence of pathologic hemorrhage. The bleeding time was only moderately delayed (ten to twenty minutes) in Case 2, when the platelet counts varied from 20,000 to 30,000. The tendency to bleed in Cases 1 and 3 was extreme only during the practical absence of platelets. In the experimental work the platelet counts in dogs and rabbits were reduced from the normal (200,000 to 600,000) to from 50,000 to 75,000 without the appearance of hemorrhagic diathesis. Only a more extreme reduction (to 30,000) caused a delay in the bleeding time, and hemorrhages into the organs. There is an analogy between this observation and the observations of Whipple and Hurwitz on chloroform poisoning.[13] They found that, when other conditions are normal, a moderate reduction in the quantity of fibrinogen does not cause hemorrhagic diathesis. In their experiments hemorrhage was prolonged only when the reduction was extreme. It seems likely, then, that both platelets and fibrinogen play a striking rôle in the control of hemorrhage. Either one may be moderately reduced without symptoms, but after an extreme reduction there is a tendency to bleed.

The experiments failed to show abnormalities in the coagulability of the blood accompanying low platelet counts, which account for prolonged hemorrhage. The coagulation time was normal, or slightly shortened when the platelet count was as low as 30,000. The quantity of fibrinogen was normal or slightly increased (0.55 per cent. to 0.65 per cent.); furthermore, the fibrinogen present was all convertible into fibrin, and the fibrin examined in a number of ways had a normal microscopic appearance.

The serum in one instance was examined by Professor Howell, and found to contain thrombin. The only abnormality in the clot noted was diminished retractibility, a peculiarity shown by Hayem and others to be associated with and probably due directly to a lack of platelets. Normal plasma deprived of platelets in various experimental ways clots quickly, but does not retract from the sides of the vessel containing it, and extrude serum.

The hemorrhagic diathesis is explained, possibly, through investigations on experimental thrombi. In a bleeding vessel, there are conditions suitable for the formation of a thrombus, that is, injured intima and a flowing stream of blood. Platelets, although they have little, if any, influence on the clotting of still blood, play a striking rôle in the formation of thrombi. The investigations of Hayem, Eberth and Schimmelbusch, Welch, Pratt, and others, have shown that after trauma to a blood-vessel platelets are the first element to adhere to the injured intima, and that within a few minutes they are massed in great numbers at the injured point. Later, leukocytes, fibrin, and red cells are included in the process, and a plug is formed consisting of masses of each of these elements. The investigations of J. H. Wright[14] show more clearly the rôle which the thrombus plays in stopping hemorrhage. His experiments were made by puncturing vessels with a needle. The resulting thrombi were likewise made up largely of platelets, and were evidently a factor in plugging the opening. An absence of platelets would lead to abnormality in the formation of thrombi, and might be a cause of prolonged hemorrhage. Pratt has laid more emphasis than other observers on the rôle which red cells play in thrombus formation. The failure of erythrocytes in carrying out this function explains, possibly, the delayed bleeding time noted in severe anemia.

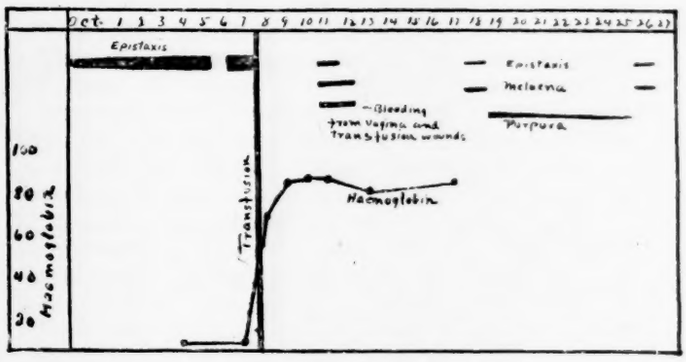


Fig. 7.—Chart of Case 3.

9. Santessin: Arch. f. Hyg., 1897, xxi, 336; Skand. Arch. f. Physiol., 1900, x, 1.
10. Selling: Bull. Johns Hopkins Hosp., 1910, xxi, 32.
11. Unpublished experiments which will appear in the Journal of Experimental Medicine.
12. A complete report of results will be made later.
13. Unpublished experiments which will appear in the Journal of Experimental Medicine.
14. Personal communication.

## CONCLUSIONS

The question now arises whether the facts admit the conclusion that an extreme reduction in the number of platelets is a cause of hemorrhagic diathesis, or whether the low platelet count must be considered a phenomenon which is sometimes found in hemorrhagic disease. The facts are as follows:

1. In the cases of hemorrhagic disease summarized, evidently differing in nature and etiology (acute and chronic idiopathic purpura hemorrhagica, chronic ulcerative colitis, aplastic anemia, nephritis), the constant features associated with the tendency to bleed were the reduced number of platelets, and the modification of the clot probably dependent on it, namely, diminished retractility.

2. In the cases reported in this paper, relief of the tendency to bleed followed not only the rises in the platelet count occurring at a remission in the disease, but followed also the rise brought about by transfusion. In the latter case, the tendency to bleed returned when the platelets disappeared.

3. Experiments in which the platelet count was reduced by benzol failed to show an abnormality in the coagulability of the blood, which accounts for the hemorrhages of benzol poisoning.

4. The structure and the mode of formation of experimental thrombi suggests, from an anatomic standpoint, that platelets play a rôle in stopping hemorrhage.

It may be permissible to mention two more points of interest suggested by the cases.

None of the patients showed so marked a tendency to bleed after transfusion as before, even after the platelet counts had dropped to their previous low level. In Cases 1 and 2, the bleeding times were ninety minutes and twenty minutes before transfusion. On the fifth day after transfusion, when the count was again low, the bleeding times were only half as long, fifty minutes and ten minutes. The spontaneous hemorrhages in Cases 1 and 3 were never so severe after as before transfusion. Since anemia is associated with a delayed bleeding time, this relief might be accounted for by the rise in the red count. In interpreting the beneficial results following transfusion, this point should always be considered.

In each of the cases, the platelets introduced by transfusion disappeared rapidly. It is granted that these platelets may have been destroyed prematurely by the disease from which the patient suffered, or by processes analogous to hemolysis, etc. The uniform rapidity in the rate of disappearance, however, suggests that platelets are short-lived bodies. This interpretation is supported by the results obtained from the study of transfusion in benzol poisoning. In this case also, platelets introduced by transfusion disappear rapidly. It is also supported by results, to be reported later, which show that the normal rate of formation of platelets is probably extremely rapid, and may amount to as much as one-fourth of the entire number in the body per day. The evidence suggests strongly that platelets disintegrate or are utilized by the body in enormous numbers, and that the count is kept constant under a given set of conditions by a correspondingly rapid rate of formation.

The type of hemorrhagic disease described in this paper can be sharply differentiated from other types of disease, such as hemophilia, melena neonatorum, purpura simplex, Henoch's purpura, etc., which are due to other abnormalities. To this type of disease belong the so-called idiopathic purpura hemorrhagicas, and some cases of symptomatic purpura. The latter will probably be found most frequently in aplastic anemia, pernicious anemia, lymphocytic leukemia, typhoid fever and intestinal diseases. The symptoms may be mild, or may be so severe and acute that the patient bleeds to death in a few days. In mild cases, purpura may not appear. The only demonstration of the disease may be (as in Case 2) excessive hemorrhage from a local lesion.

The diagnosis is easy. If the platelet count is reduced to a sufficient degree to cause hemorrhage, the fact may be determined by examining carefully made cover-glass preparations. The absence of retractility of the clot is considered by Hayem and his pupils characteristic of the condition, and is of diagnostic import. A point which I have found of value in following the cases and also in the diagnosis is the marked delay in the bleeding time.

Transfusion gives good results in the treatment of the disease. In addition to replacing blood, it stops hemorrhage for a few days, and may tide the patient over a serious crisis. The treatment is probably applicable to the symptomatic as well as to the idiopathic types of disease, and may be useful in the treatment of some cases of typhoid hemorrhage.

In concluding, I wish to acknowledge my indebtedness to Dr. E. H. Whipple, of the department of pathology, to Professor W. H. Howell of the department of physiology, and to Dr. L. Selling for their kind assistance in the experimental work.

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## ABSTRACT OF DISCUSSION

DR. J. H. PRATT, Boston: There seems to be some relation between the blood platelets in the blood and purpura hemorrhagica. Normally, the number of blood platelets is about 450,000 to the cubic millimeter. In simple purpura I found the platelet count was greatly reduced; in one fatal case it fell as low as 7,000. This patient had continuous hemorrhages from the lips and mouth. The platelet count was made 3 times on different days, and the largest number of platelets found was 16,000. In a case of mild purpura hemorrhagica there were 105,000 platelets per cm. The only other condition in which I have found very low platelet counts is lymphatic leukemia. The relation between purpura and the coagulation time is less clear. Wright asserted that purpura was due to delay in the coagulation time and that the treatment of the disease consisted in reducing the coagulation time to the normal by the administration of calcium chlorid or calcium lactate. I found the records of the Johns Hopkins Hospital and the Massachusetts General Hospital those of 34 cases of purpura in which the coagulation time of the blood had been determined. The average coagulation time of the blood in this series of cases was 5½ minutes, which is within the normal limits. In only a few cases did I find a delay in the coagulation. I have seen a patient with purpura bleeding to death from the mucous membrane when the coagulation time was normal. Over the lobe of the ear at the site of the puncture a thick, moist clot formed, but blood continued to ooze from the wound for a long time. I believe that Dr. Duke's method of determining the "bleeding time" will be found to have great clinical value. In the case I have just cited in which the coagulation time was normal the bleeding time was doubtless greatly increased.

DR. W. W. DUKE, Kansas City, Mo.: Transfusion must be done by the direct method. Defibrinated blood is free from platelets and therefore in itself would not increase the count. There is a special indication for transfusion preparatory to operation in this condition. In addition to the usual results which follow transfusion, the tendency to bleed is diminished.

# THE OPERATIVE TREATMENT OF CONGENITAL CLUB-FOOT

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When a number of different operations are devised for the same surgical condition, we may assume, first, that the condition is a difficult one to treat successfully, and, second, that no one operation has proved entirely satisfactory in all cases. This is certainly true of club-foot—pes equinovarus. Few if any deformities are more difficult of perfect correction, and in few conditions, if any, do we see more postoperative relapses. It is not the object of this paper to discuss at length the various operations which have been devised, but rather to outline the surgical treatment that, from a varied experience with cases personally treated, I have learned to be most satisfactory.

## WHEN TO OPERATE

Operation should be done early. Patients should not be allowed to remain with deformity for one to two years before a corrective operation is performed. If the patient is seen at birth or a few days later, forcible manipulation and a retention bandage dressing will suffice. Cases of the severest types of deformity treated thus early are corrected without operation. For the first three weeks when the skin is soft and tender, the corrective position should be retained after corrective manipulation by adhesive plaster, which is applied over a gauze bandage. After the third week the zinc oxid adhesive plaster can be applied directly to the skin. At the end of the third month, if corrective treatment is still required, a plaster-of-Paris dressing should be employed and this should always extend up to the groin. It is impossible to prevent the inward rotation of the foot and leg by a dressing that does not extend beyond the knee joint. If at the end of the seventh month the deformity of varus or equinus, or both, are present, due to contracted structures on the inside of the foot, or contraction of the Achillis, then an operation should be performed.

Though there are bone changes in the tarsus, the deformity is due in great part to the abnormal shortening of the soft structures. The bone deformities involve principally the astragalus, and also to a lesser extent the os calcis, scaphoid, cuboid and semilunars. The early remodeling of the foot and ankle, however, does not necessitate any operative bone procedure, as the bones are comparatively soft, and the deformities are not such as to prevent a corrective replacement of the foot. The greatest difficulty is the correction of the varus. This is due to the shortened structures on the inner side of the foot, principally the skin, subcutaneous tissue and fascia. Unless these are divided it is impossible to correct the varus. In severe cases, in patients over 6 months of age, corrective manipulation by stretching the structures gives very unsatisfactory results. The inner border of the foot is short and must be lengthened. Stretching skin and fascia does not give permanent lengthening.

## OPERATIVE PROCEDURES

1. *Manipulation.*—If the deformity is but slight, it may be treated by manipulative measures with the patient under an anesthetic. Lorenz has emphasized the importance of this line of treatment. The foot is placed over a wedge-shaped block, and the varus is first corrected. Not until the fore part can be readily everted should manipulation cease. This may mean from a half to three-quarters of an hour's work. When this is accomplished attention should be given in like manner to the equinus, stretching down the tendo Achillis. This manipulative operation may be repeated several times at intervals of a few weeks, many operators preferring several sittings to one. The application of the dressing is in all cases one of the most important steps of the operation. The foot is carefully held by a skilled assistant, with both the varus and equinus in overcorrection. A pad of shaken-out gauze about the size of one's fist is placed over the dorsum of the foot, another over the sole, and a third over the back of the heel. These are retained in place by a gauze bandage. Great care is taken not to draw the edge of any turn of the bandage too snugly over the instep, for this has frequently been the cause of subsequent circulatory disturbance. A thick layer of cotton is then applied from the toes to the groin, which is firmly but smoothly bandaged with gauze. A plaster-of-Paris dressing is applied to the whole limb, extending from the tip of the toes to the groin. Each toe should be of a bright pink color and the greatest care should be taken that good circulation is established before the patient is removed from the operating-room. If the circulation is not good a diamond-shaped fenestra should be cut out of the plaster over the flexure of the ankle-joint, and all the dressings over this area removed directly down to the skin. This eliminates the necessity of removing the whole plaster-of-Paris mold.

2. *Subcutaneous Division of Structures.*—Better results are obtained, even in children under 12 months of age, when in addition to manipulative procedures, subcutaneous tenotomies are performed. The plantar fascia and subcutaneous tissues on the inner and under side of the foot are subcutaneously divided. The tenotome is passed in immediately under the skin, and then turned with the cutting edge towards the deeper structures. The inner side of the foot is now forcibly stretched and the tightened structures are easily divided. If the skin is too short, it also should be cut. The varus is then forcibly corrected until an overcorrection of the deformity is obtained. To correct the equinus the tenotome is passed beneath the tendo Achillis and with a saw-like motion this tendon is cut, almost, but not quite through, the uncut remainder being torn apart by pressing up against the foot. By this method a few fibers of the tendon remain which act as a bridge in the process of repair and along which reunion may more readily take place. The dressing already described is then applied.

One sees many postoperative cases in which the forefoot has been successfully everted but the heel is markedly inverted. This should be carefully avoided by correcting the position of the os calcis, which cannot be done in the great majority of cases without first cutting the tendo Achillis and forcibly everting the heel.

3. *Phelps' Operation.*—Experience has proved to me that Phelps' operation is the one of choice in all severe cases of patients over 2 years of age. It is sometimes advisable even at an earlier age. I have employed this operation as early as 2 years of age and as late as forty-five years of age. An incision is made commencing in front of the internal malleolus and extending one-third of the distance across the sole of the foot. This incision is carried down to the neck of the astragalus on its inner side. The foot is forcibly corrected, all re-

sisting structures being cut. These are the skin, superficial and deep fascia, the abductor pollicis, the tendon of the tibialis posticus, the flexor brevis muscle, and long flexor tendons of the toes, and finally, if necessary, the deltoid ligament wholly or in part. These resisting structures having been cut, the varus can be readily corrected. It is seldom necessary to ligate any vessel. The open wound thus formed when the varus is corrected may be an inch or more in width. This is covered with protective or sterilized rubber tissue over which the shaken-out gauze is placed as already described. Phelps always cut the tendo Achillis first before making his plantar incision. I have found it more satisfactory to correct the varus before the tendo Achillis has been cut, and always to leave the subcutaneous tenotomy of this tendon as the last step in the operation. If sufficient correction is not obtained by this method, Phelps advised a linear osteotomy through the neck of the astragalus.

If this fails, a V-shaped piece should be removed from the os calcis, the apex of the V meeting the linear osteotomy, and this failing, the removal of the cuboid and scaphoid is indicated. The great advantage, however, of Phelps' method is that bone surgery is rarely necessary. The other advantages are, (2) a lengthening of the foot, (3) a perfect correction of the deformity, (4) a permanent correction, (5) a rapid operation, (6) a useful foot without the need of a postoperative brace. Reported failures are generally owing to a fear of making the incision too long and of not opening the gap sufficiently wide, thus obtaining an insufficient over-correction of the foot. The resulting scar is not hypersensitive. The anesthesia on the under surface of the foot anterior to the incision, which sometimes results, is not permanent.

4. *Excision of a Portion of the Cuboid.*—This operation is strongly recommended in selected cases. In treating clinical patients it often happens that the postoperative care is neglected by the parent and the patient returns months later with marked relapse. In three such patients, one of whom had had three previous operations, I obtained a cure by the removal of the proximal third of the cuboid, making a wedge-shaped excision, at the same time removing the articulating surface of the os calcis. When the foot is forcibly corrected, this space thus formed is closed in and the newly cut surfaces brought closely in contact. This forms a fixed joint, which, after union takes place, holds the foot firmly in position. This operation is especially indicated when the resistance to correction is due not so much to the shortened tissue on the inner side of the foot, but more especially to the disproportionate growth of the cuboid, which can be readily recognized.

5. *Osteotomy of the Tibia.*—The inward rotation of the tibia which sometimes is present results in a toeing inward after the equinovarus has been corrected. This is more especially noticed as the child walks. If the rotation is but slight, it can be satisfactorily treated by a brace. This brace must extend from the foot to the pelvis, as any shorter brace will not control the inward rotation of the foot. With the pelvic band firmly fixed we can rotate the lower end of the brace at will, and being attached to the shoe, the foot is rotated out with it. In cases in which correction cannot be obtained in this way operation should be done. A subcutaneous osteotomy of the tibia is performed. The lower end of the tibia and the foot are rotated outwards, and the limb put up in a plaster-of-Paris dressing, which should be left undisturbed for five weeks. This treatment alone will ensure satisfactory results.

### POSTOPERATIVE TREATMENT

The postoperative treatment of congenital club-foot is quite as important as the operation itself. The number of relapses that occur are due in great part to lack of care, either on the part of the parent or on the part of the surgeon, usually of the former. The first dressing need not be removed for five to six weeks, irrespective of the operation which has been performed. After the first dressing is taken off, another should be applied. It is well to remember that a plaster-of-Paris mold makes the best fitting and lightest dressing that can be applied, and so it is advisable to continue these molds for upward of six months. A short mold should not be applied; the mold should always be carried well above the knee. If a brace is deemed advisable after an operation, it should extend up to the pelvis with a pelvic band. This is a good general rule to follow, and will avoid much trouble and unsatisfactory adjustment experienced with shorter braces. A laced shoe with stiffened ankle should be worn. The sole and heel of the shoe should be one-eighth inch thicker on the outer side than on the inner, thus giving an everted tilt to the foot. Such a shoe should be worn for two years.

Supervision of the case should be continued for at least one year and a half after the operation. This is essential because of the great tendency of the deformity to relapse, and the liability of a gradual relapse being unnoticed until a marked deformity has recurred. The prognosis in every case is good. The foot may remain a little shorter than its fellow. In cases in which long-continued retentive bandage dressings have been necessary, the muscular development below the knee is permanently affected. The amount of this atrophy will depend on the conditions of the case.

### SUMMARY

I. Corrective manipulation should begin at birth.

II. Early operation should be done if necessary (seventh or eighth month).

III. Operative procedures will depend on the degree of deformity, and are as follows:

1. Forcible manipulation under an anesthetic.
2. Subcutaneous division of contracted structures.
3. Phelps' open operation.
4. Other bone operations, especially:
   - A. Excision of a portion of the cuboid in selected cases.
   - B. Osteotomy of tibia for marked inward rotation.

IV. Long-continued and careful postoperative attention is essential.

V. The best results are always obtained when the treatment is begun at birth.

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**Ear Disease in Children.**—The greatest service we have yet to render to childhood is to recognize ear disease when there are no striking manifestations. This result will be attained when the knowledge of the pathologist is applied by the clinician, and the ears of all sick children are frequently examined as a matter of routine.—E. Gruening, in the *Laryngoscope*.

# PARTIAL THYROIDECTOMY IN DEMENTIA PRÆCOX*

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The term "dementia præcox" is applied to a condition of progressive insanity occurring in young persons, usually between the ages of 18 and 25 years, though occasionally it may be delayed until later in life. This disease, whilst presenting many variations, has been divided into the following groups by Kraepelin: hebephrenia, catatonia, and paranoid dementia, which at times are sharply defined from each other, but sometimes resemble each other so closely that a differentiation is difficult. About 15 per cent. of all cases admitted to institutions for the care of the insane are of this character. It is a chronic form of mental disease, usually beginning insidiously, but sometimes acutely, and generally terminating in complete imbecility. In 70 per cent. of cases there is a history of some hereditary taint; in a few cases a history of trauma or of some infectious disease; in others of overexertion, mental or physical, and in some there is apparently no exciting cause. The chief characteristics of this disease, or possibly group of diseases, are emotional dulness and indifference, progressive mental deterioration, lack of judgment, retarded psychical reaction, weakness of will, with little or no disturbance early in the disease in the field of apprehension or of memory. Even in childhood many of these individuals are peculiar and eccentric; some of them are of dull intellect, but others are well educated and of more than average intelligence. These patients for quite a while before mental symptoms appear may complain of various disagreeable cephalic sensations, of inability to concentrate the attention, of ready fatigue, insomnia, restlessness, listlessness and apathy or excitement, or egotism, unreasonable emotional outbreaks, depression, carelessness as to obligations, indifference and neglect of person; their actions and statements may be silly and impulsive; the patients may be indifferent to the feelings of family and friends, or may display peculiarities of action, dress and speech. With these symptoms there is generally loss of weight, disturbance of the menstrual function, loss of appetite, etc.

This period of the disease may extend over a long or short time, and with or without the above symptoms we may have the development of one of the three characteristic forms.

The hebephrenic form is characterized by the above-mentioned symptoms, which increase in intensity, and to which may be added hallucinations and delusions, which are seldom very prominent, spells of excitement and depression, unreasonable outbreaks of temper, disturbance of conduct, which becomes childish and silly, with more or less marked emotional dulness.

The paranoid form includes two groups of cases that are characterized by the great prominence and persistence of delusions and hallucinations leading in a few years to dementia.

The catatonic form, so called from one of its most prominent symptoms, that of muscular spasm or rigidity, is usually subacute in its onset. After a short prodromal period, characterized by an entire alteration in the disposition and character of the patient, with more or less mental depression, anxiety and fear, certain peculiarities of the motor system set in with marked muscular tension. Hallucinations and delusions often appear, which are usually of a religious character, incoherent and changeable. Consciousness is clouded or lost and thought disturbed, while the emotional attitude is generally sad or one of entire indifference. Soon a stage of stupor supervenes, in which the patient will not talk or answer questions, may not eat and requires to be fed artificially, remains in one position for long periods and becomes absolutely bestial in his habits. This lasts for varying lengths of time, alternating with remissions in which the sufferer regains more or less lucidity but does not become entirely normal, or he passes from a stuporous state into one of excitement of mind and body, after which he becomes progressively demented.

We have in addition to the mental symptoms, in many cases, marked physical signs, the more frequent being temperature disturbances, rapid, slow or irregular pulse-rate, disturbance of the arterial pressure, marked vasomotor and secretory disturbances, increased and decreased tendon reflexes, loss of weight, tremors of the tongue, facial muscles and extremities, increased mechanical irritability of the muscles, dilated pupils, excessive pupillary activity, leukocytosis and convulsive seizures.

The course of the disease as a rule is slow, extending over several years. All the cases of the paranoid form eventually terminate in dementia. In the hebephrenic form 75 per cent. of the cases terminate in complete mental annihilation, 17 per cent. become demented to a less degree and about 8 per cent. apparently recover. In the catatonic form remissions are frequent, lasting from a few hours to several years; 55 per cent. of the cases terminate in total dementia; 35 per cent. of the patients become demented to a less degree and 10 per cent. apparently recover.

For many years this condition has been ascribed to some endogenous intoxication, and the different internal organs have been interrogated, but with very indifferent success. Two Italian observers, Bernigni and Zilocchi, report degeneration in the thyroid and other glands, and Kraepelin also refers to changes in the thyroid gland in some cases. In 1907 Drs. H. J. Berkley and N. M. Owensby of Baltimore, while casting about for some rational basis for the treatment of this disease, observed a superficial resemblance between catatonia and exophthalmic goiter (Graves' disease), and were led to think of the thyroid gland as a causative factor in the production of this condition. Among the symptoms suggestive of increased or perverted thyroid activity were tremor, hyperidrosis, muscular spasm or rigidity, increased reflexes, leukocytosis, and loss of weight. After the failure of methods of treatment by drugs, and various glandular extracts, and a distinct intensification of the symptoms when iodin and thyroid preparations were used, it occurred to them to try the removal of a portion of the thyroid gland.

In June, 1907, permission was secured to operate in the Baltimore Insane Hospital at Bay View, on two patients, who were the subjects of advanced catatonia. The first patient was a girl aged 19, who after the usual prodromal symptoms, with religious delusions, became excited, unmanageable and destructive, and was committed to the hospital in March, 1907. She then became mute, restless, apathetic, catatonic and untidy in habits and dress, with mask-like expression, sweating and a leukocytosis of 20,000. Subsequently hallucinations supervened, with much excitement, sleeplessness and

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

refusal of food. The second patient also presented about the same symptoms, with religious delusions, and excitement, subsequently becoming mute, with increased reflexes, hyperidrosis, tremor, muscular rigidity and slight leukocytosis. This was a man aged 21. The operations were done by Dr. R. H. Follis, who removed about four-fifths of the right lobe of the thyroid gland in each case.

These patients exhibited a marked change in their mental condition within forty-eight hours and in the course of several months were restored to a condition of physical and mental soundness, and became again useful members of society. Two other patients operated on in November, 1907, improved more slowly, but eventually were restored to health; but in one case there was a recurrence of the symptoms two years later. The same physicians also operated in three cases at the Second Hospital for the Insane of Maryland, which were of longer duration and more advanced, but without beneficial result. In the case of a man aged 25, an inmate of the Sheppard and Enoch Pratt Hospital, who was mute, refused food, and remained in one position until moved by an attendant, and had been in this condition for four and one-half months, partial thyroidectomy was followed by most excellent success. The patient made a complete recovery and was seen by me one and one-half years subsequently, and seemed entirely rational and was following his usual avocation, that of a driver of an express wagon. All the above cases were reported by Dr. Henry J. Berkley.[1]

The only other cases I have been able to find in the literature are those reported by Kanavel and Pollock of Chicago,[2] consisting of twelve patients suffering with the catatonic form of dementia præcox, who were submitted to partial thyroidectomy.

Dr. Kanavel reports his results as follows:

> There was absolutely no result in any of the old cases. Of three patients operated on in the so-called favorable stage, two showed marked improvement, lasting, in one case, for two months and in the other, for six months. The third showed no change at all. The two who showed temporary improvement relapsed at the end of the periods mentioned, and are now practically in the same condition as before operation. The pathologic examination of the glands removed did not show changes favoring the diagnosis of thyreotoxicosis although the changes were compatible with it.

Kanavel concludes that while we cannot assume any distinct pathologic basis for ascribing dementia præcox to a hyperthyroidism similar to exophthalmic goiter, the pathologic picture cannot definitely exclude a perverted thyroid metabolism as a factor.

Dr. Berkley's conclusions are also very much in accord with those expressed above. He says:

> The results of the histologic and chemical examinations have been inconclusive, as to whether or not we have to deal with a perversion of the secretion of the thyroid gland in catatonia. Nevertheless, it is possible from the symptoms that in catatonia we have a perversion of the secretion of that organ, and that partial thyroidectomy induces a return to the normal in the secretion of the remaining portion of the gland.

As a contribution to the literature of this subject, I append the following brief summary of five cases of patients operated on by surgeons connected with the University Hospital, Baltimore: Of these patients one died from acute thyroidism. Two were greatly improved for a considerable period, and then relapsed into their previous condition. One was not materially benefited and has since been placed in an institution for the insane; and one improved but has been lost sight of.

This experience is not very encouraging; nevertheless I believe the following conclusions to be justified.

### CONCLUSIONS

1. There seems to be some connection between the thyroid gland and the peculiar affection called catatonia.
2. Partial thyroidectomy in the early stages of this disease exercises a favorable and sometimes a curative effect on the condition.
3. In late stages of catatonia and in the other forms of dementia præcox, partial ablation of the thyroid is not followed by beneficial results.
4. The operation is attended with the usual dangers of thyroidectomy and should be done with as much care as in exophthalmic goiter, especially in regard to free drainage.

114 West Franklin Street.

1. Berkley, Henry J.: Jour. Insanity, January, 1909.
2. Kanavel, A. B., and Pollock, L.: THE JOURNAL A. M. A., Nov. 13, 1909, p. 1675.

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## THE INFLUENCE OF COLLOIDAL PROTECTION ON MILK *

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With the aid of the ultramicroscope which brings into visibility particles whose size approximates the theoretical molecular dimensions, it has been demonstrated that colloidal solutions occupy a sphere midway between coarse mechanical suspensions and true crystalloidal solutions. The slight Brownian movement of small suspended particles at the limit of visibility in the ordinary microscope (about ¼ micron), is insufficient to keep them afloat, and they gradually settle out of solution; but as the subdivision of the particles proceeds, this motion gradually increases in speed and amplitude, until it becomes so violent that the particles remain permanently afloat and in solution. Ultramicroscopic particles (ultramicrons) as small as about 5 microns (the present limit of the ultramicroscopic visibility) describe an average free path of about ten times their own diameter in one-sixth to one-eighth of a second.

From a practical standpoint, colloids may be divided into the *stable* or *reversible* colloids or hydrosols, which do not readily coagulate and redissolve after desiccation at ordinary temperatures (e. g., gelatin, gum arabic), and the *unstable* or *irreversible* colloids or hydrosols, which exhibit contrary properties (e. g., pure colloidal metals and oxids). Most electrolytes cause the flocculation of fine suspensions and the coagulation of unstable colloids. Stable colloids are not only insensitive to most electrolytes, but they possess the striking and very important property, even if present in surprisingly small quantity, of being able to stabilize and protect unstable colloids from coagulation and permit them to redissolve after desiccation.

The accompanying diagram exhibiting the relation of suspensions, colloidal solutions and crystalloidal solutions, will serve to make clear what is above stated:

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

The application of the simple principles of colloid chemistry to foods gives us a new and valuable insight into their behavior during digestion, for it is a well known fact that the digestibility or desirability of a food cannot be expressed solely by its chemical analysis, any more than such an analysis will express the difference between lamp-black, graphite and diamond, all of which the chemist would report as practically pure carbon.

From a colloid-chemical standpoint, the main constituents of milk may be classified as follows:

In crystalloid solution { *salts* (such as NaCl, etc.) / *sugar (lactose).*

In colloidal solution { *casein*—an unstable or irreversible colloid. / *lactalbumin*—a stable or reversible colloid.

In suspension { milk fat.

It is possible that some of the fat may be in colloidal solution, for sodium oleate may be present, and this salt is a reversible colloid in aqueous solution.

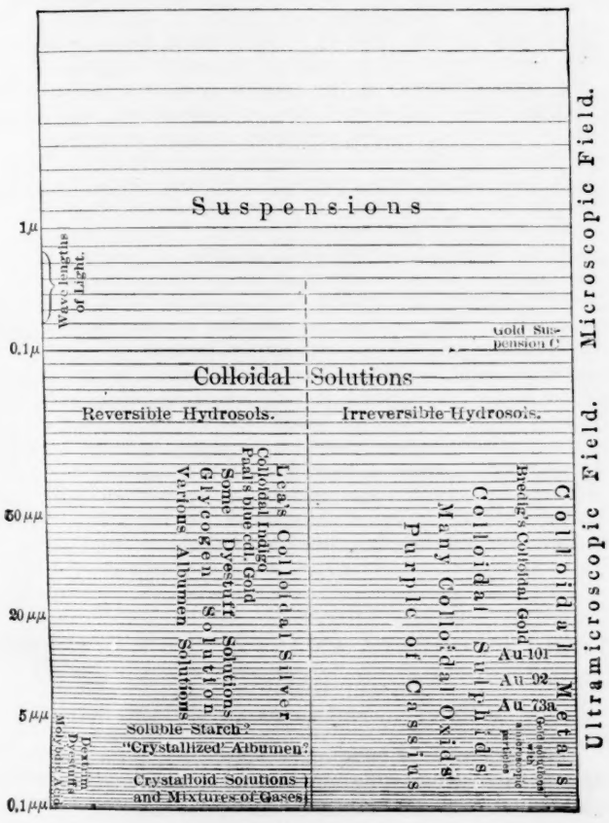


Diagram showing classification of colloidal solutions[1] according to the size of the particles contained in them and according to their behavior on desiccation.

Most formulas and recipes for modifying cows' milk for infant feeding, and for that matter, many analyses, combine the percentages of lactalbumin and of casein under the collective title of "total proteids," thereby obscuring the highly important fact that the lactalbumin stabilizes and protects the casein from coagulation by acid and rennin, as has already been demonstrated.[2]

Some of our recent experiments have demonstrated that after digestion with pepsin, lactalbumin loses its protective action. We are also informed by Prof. H. Bechhold that these results have been confirmed by ultrafiltration experiments recently conducted by Dr. Grosser at the Krankenhaus, Frankfort.

The subjoined table will show how milks are influenced by a difference in the ratio between the casein and lactalbumin:

AVERAGE COMPOSITION

| Kind of Milk. | Casein. | Lact-albumin. | Fat. | Behavior with Acid. | Behavior with Rennin. |
|---|---|---|---|---|---|
| Cow ..... | 3.02 | 0.53 | 3.64 | Readily coagulates. | Readily coagulates. |
| Woman ..... | 1.03 | 1.26 | 3.78 | Not readily coagulated. | Not readily coagulated. |
| Ass ..... | 0.67 | 1.55 | 1.64 | ..... | ..... |

It is interesting to note that the milks in the above table are arranged in order of their digestibility, which also corresponds with their relative colloidal protection. Thus Jacobi[3] has stated that asses' milk has always been recognized as a refuge in digestive disorders in which neither mother's nor cow's milk or its mixtures were tolerated.

The addition of protective colloids to cow's milk stabilizes it and makes it act more like mother's milk when treated with acid and rennin. In fact, if sufficient protective colloid be added, coagulation of the casein in the stomach may be entirely prevented, or at least the coagula kept in a very fine state of subdivision.

The action of protective colloids is beautifully illustrated in the ultramicroscope, which enables us to see the individual particles of cow's casein in active motion and watch the course of their coagulation by acid, first into small and then into larger and larger groups, whose motion decreases as their size increases, until finally they sink out of solution in coagulated masses. If, however, some gelatin or gum arabic solution be added to the cow's milk *before* the addition of the acid, the casein particles continue their active dance and do not coagulate. In this connection it is interesting to note that the casein particles in mother's milk appear to be much smaller than those in cow's milk, probably because of the more highly protective medium in which they are formed and exist.

Although their method of action was not perfectly understood, protective colloidal substances have for years been used in the modification of cow's milk for infants. For over twenty years Jacobi has advocated the addition of gelatin and gum arabic to cow's milk and infant's diet,[4] and the use of gruels, dextrinized starch and similar reversible colloids is familiar to all. It is interesting to note that sodium citrate, which is largely employed as an addition to cow's milk, acts as a protective colloid, and when going into solution actually exhibits actively moving ultramicrons in the ultramicroscope, a fact which indicates its colloidal condition.

In addition to stabilizing the casein, protective colloids in milk have a very important influence on the milk fat. In the first place is to be considered the emulsifying and emulsostatic action of reversible colloids,[5] which may be demonstrated by adding ferric chlorid to an ordinary emulsion of cod-liver oil.[6] This coagulates the emulsostatic protective colloid and the oil separates out. Of much greater importance, however,

1. Zsigmondy, R.: Colloids and the Ultramicroscope (English trans. by J. Alexander: Zur Erkenntnis der Kolloide), John Wiley & Sons, New York, 1909.

2. Alexander: Ztschr. f. Chem. u. Ind. der Kolloide, 1909, iv, 86; Ibid., 1909, v, 101; Ibid., 1910, vi, 197; Jour. Soc. Chem. Industry, 1909, xxviii, 280; Jour. Am. Chem. Soc., 1910, xxxii, 680; Alexander and Bullowa: Arch. Pediat., 1910, xxvii, 18.

3. THE JOURNAL A. M. A., Oct. 10, 1908, p. 1216.

4. Jacobi, A.: The Intestinal Diseases of Infancy and Early Childhood, 1889.

5. Moore and Krombholz: The Relative Power of Various Forms of Proteid in Conserving Emulsions, Brit. Jour. Physiol., 1908, xxii, 54.

6. In the churning of butter, the protective action of the lactalbumin is overcome by mechanical agitation, which frequently coagulates colloids.

is the result of stabilizing the casein, for it is a well known fact that casein in curding carries down mechanically most of the milk fat present,[7] yielding a greasy, fatty curd which is very difficult for the digestive juices to work on.

It is evident, then, that there is something to besaid on both sides of the much-mooted question as to whether fat or casein is responsible for certain forms of indigestion, for apparently both have to do with the formation of the "fat stools." So-called "fat indigestion" therefore may be, and in many cases probably is, caused by insufficient colloidal protection of the casein, and may in such cases be met by adding protective colloids rather than by reducing the percentage of fat to an undesirable minimum. Indeed, cases of "fat indigestion" occur in which the quantity of fat in the cow's milk fed has been reduced to 2 per cent.

The most conflicting opinions have been expressed regarding the desirable percentages of protein and fat in cow's milk as modified for infants. Thus Jacobi[8] states that a high percentage of protein does not improve a milk's digestibility (therein disagreeing with Dr. Walls, of the Northwestern University), and he therefore attributes the digestibility of asses' milk to its low fat content.

But, on the average, mother's milk contains more fat than the less digestible cow's milk; and even if cow's milk be so modified that it contains the same percentages of "proteid" and fat as mother's milk, it is still not so readily digested. Jacobi suggests that a difference in the fat itself is a factor of importance, and this is undoubtedly so, for S. Levites has shown[8] that the most fluid fats are most readily digested. The main source of these conflicting opinions, however, lies in the rather unhappy term "total proteids," which as used, includes substances with such different properties as casein, lactalbumin, gluten, and broth extractives, and thus conceals the protective action that the reversible colloids exert on the coagulable casein.

Colloidal protection may be accomplished by the use of animal proteins (gelatin, albumin), vegetable proteins (gluten) or carbohydrates (gum arabic, tragacanth, Irish moss), so that there is wide choice in clinical practice. The dextrinized gruels now used combine the protective colloids gluten and dextrin. Under the ordinary conditions of digestion, casein is coagulated only in neutral or acid solution; it is quite evident, therefore, that alkalis such as lime water and bicarbonate of soda, may by their antacid action, partially or entirely inhibit the coagulation of casein. Quite different, however, is the case of sodium citrate which acts as a protective colloid, as before stated.[9]

### CONCLUSION

Increasing the colloidal protection of the casein in cow's milk by the addition of suitable protective colloids tends to improve the digestibility and absorption of both the casein and the fat, and to prevent the formation of indigestible curds and their consequences.

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7. For an excellent exposition of the Czerny-Keller views on this subject, see Schereschewsky, Jos. W.: Infant Feeding, Bull. 41, Hyg. Lab. U. S. P. H. and M.-H. Service, p. 658.
8. Hoppe-Seyler's Ztschr. f. Physiol. Chem., 1906, xlix, 273.
9. Gengou: Arch. internat. de physiol., 1908, Nos. 1 and 2, or Bordet-Gay: Studies in Immunity, p. 423, John Wiley & Sons, New York, 1909.

### ABSTRACT OF DISCUSSION

Dr. Frank S. Churchill, Chicago: I think that Mr. Alexander cannot be familiar with the widespread habit among us of "splitting" proteids. In feeding a fairly healthy baby we do not have to split them, but in the case of babies of limited casein digestive power we have to use split proteids, doing it by substituting whey. As a clinician I want to make that statement.

Dr. E. H. Bartley, Brooklyn: Does milk sugar pass into a colloidal or into a crystalloidal state? It is known that milk sugar when first dissolved will give a certain rotation in the polariscope, which changes gradually for twenty-four hours and then this change ceases.

Dr. Thomas S. Southworth, New York: All the information we can get of a collateral order which proves or disproves the theories on which we have been working is of the greatest value to the pediatrician. I hope Mr. Alexander will correct the impression, which he probably did not mean to convey, that it was possible by the protection of colloids to prevent entirely the coagulation of casein. We know as clinicians that though it interferes with it, we may still get pretty large curds in stools when such things have been added to the food.

Mr. Jerome Alexander, New York: I was aware of the term "split proteid," and of its significance, but in a paper of this kind I could not go into all the points involved. There is a great difference in the relative protective action of the various colloids. Not only does each substance vary, but it varies according to the particular medium in which it is dissolved. Gelatin is the most efficient of all protective colloids; but as they vary considerably in their protective action, the physician must find out from experience which is the most efficient in any particular case. Whether milk sugar goes into colloidal or crystalloidal solution is a matter of small consequence. It is possible that its particles undergo a progressive decrease in size and there is no way of saying where colloidal solution ends and crystalloidal solution begins. Colloidal protection will not necessarily prevent the curding of casein entirely, for coagulation would depend on the acidity of the gastric juice, which in turn would be influenced by the sugar content or whatever would tend to produce lactic acid. When we increase the protection of casein in cows' milk we simply tend to make it more difficult to coagulate its casein. Whether the casein will coagulate in the stomach or not we cannot certainly forteil, but so far as the test tubes show it is much less sensitive to coagulation by acid or rennin.

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## IS ACUTE CHOREA AN INFECTIOUS DISEASE?

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The frequent (though not constant) association of chorea with acute inflammatory rheumatism is a well-established fact. Whether the infectious element of the latter (*Micrococcus rheumaticus*, streptococci) or the toxins elaborated by the suspected micro-organism are the same etiologic causes of the acute chorea it is impossible as yet to ascertain. That other infectious diseases may be followed by attacks of chorea is also well known. Whooping-cough, measles and influenza have been reported as immediately preceding the onset of chorea. All these facts are highly presumptive of the contention of some authors that chorea is infectious in nature. This presumption gains a still more solid ground if we recall the bacteriologic work of Pianese, who found in the spinal cord of a choreic individual a bacillus with the cultures of which he made successful inoculations. Micro-organisms in the brain have also been found by other authors.

While the view of infectious origin of acute chorea is highly possible, nevertheless Charcot's and Joffroy's

original opinion must not be lost sight of, viz., the existence of an inherent degenerative predisposition of the motor apparatus in choreic individuals. This predisposition is brought in evidence as soon as some special cause disturbs the latter. This cause may be any infectious disease.

The observation which I wish here to put on record is in line with the "infection" view of the pathogenesis of chorea. The only difference lies in the fact that instead of being a generalized infectious disease, the cause apparently lies here in an infectious localized focus.

*History.*—A boy, aged 10, through neglect of his teeth and exposure began to suffer severe pains at the level of lower molars on the left side. The gum became swollen, the jaw at the same level was extremely tender to touch. There was a very marked thickening of the lower maxilla, and the child developed fever and excruciating headache. The pain and tenderness of the jaw increased in intensity. Gradually an abscess formed. An incision was made on the sixth day and a large amount of pus was evacuated; microscopic examination showed the presence of streptococci and staphylococci. The subjective symptoms gradually subsided. While the wound kept on discharging, the mother noticed that things would drop out of the boy's right hand; then he would draw up his right shoulder, wink his eyes and make faces. Gradually the entire body became affected; he could not stand still. The movements were sudden, incoherent and irregular.

*Treatment and Course of Disease.*—At that stage of the disease, viz., eight days after the onset, the boy was brought to me. It was a case of typical Sydenham's chorea. The remarkable history of the case in regard to the chronologic relationship between the pus formation and the development of choreic movements led me to the thought that there was probably also a causal relationship between the two conditions, and that therefore the clearing up of the nervous phenomena would probably depend on the removal of the focus of infection. Accordingly, energetic measures were taken to remedy the latter condition. The decrease of the purulent discharge became more and more noticeable. The choreic movements did not decrease at first with the same rapidity, but later became less and less marked. Finally the wound healed up. The nervous phenomena continued for a period of six days and eventually have totally disappeared. The entire duration of the chorea was eighteen days. No medication whatever was administered and the whole attention was concentrated on the removal of the focus of infection. General directions, however, were given as to a light diet and removal of stimulants such as tea and coffee.

The parallel development of the localized inflammation, with the development of an abscess and the appearance of typical choreic movements at the time of formation of pus; then later on the gradual disappearance of the purulent discharge with its streptococci and staphylococci and marked amelioration of choreic movements; finally the disappearance of muscular twitchings when the infectious focus was removed—all these facts make the case highly interesting and instructive from the standpoint of the pathogenesis of chorea. This case can be placed alongside of cases with an immediately preceding or accompanying history of acute inflammatory rheumatism, whooping-cough, measles, influenza, etc. The etiologic factor presents itself here, clinically at least, with far more evidence than in the cases with a history of an infectious disease. Of not smaller importance is the therapeutic aspect of the case.

In further support of an infectious origin of chorea I may mention a case seen very recently with Dr. Helen P. Proctor.

*History.*—A girl of 13 was suddenly taken with chills, fever, headache, vomiting, and general malaise. On the third day, when the above symptoms began to subside, choreiform movements were noticed in the right hand. Gradually the latter spread over the entire body, and at the time the patient was seen by me, viz., twelve days after the onset, she presented a typical form of acute chorea. The irregular and incoherent movements, however, were more marked than in an ordinary case. The twitchings were so violent especially during voluntary acts, that she was unable to sit up or stand up. Bedridden position was the most comfortable one for the patient.

The few symptoms immediately preceding the onset of the chorea are identical here with the prodromal manifestations of acute anterior poliomyelitis, which is undoubtedly an infectious disease.

The infectious onset of this case is self-evident and perhaps the severity of the chorea is in keeping with the severity of the infection; the girl indeed complained of very severe headache.

The few facts brought forward speak in favor of some infectious element which irritating the motor tract or motor area produce the characteristic phenomenon of the malady. It is true that in many cases no etiologic cause can be detected in chorea. On the other hand, no apparent cause can be brought out in some cases of acute anterior poliomyelitis and yet being convinced of the infectious nature of this disease, we suppose that the prodromal symptoms are sometimes so slight that they pass unnoticed by the little patient's relatives. It is, possible, therefore, that a similar prodromal condition exists sometimes also in chorea. We do know that infectious diseases may be followed by chorea, also that a local infection may be followed by or develop simultaneously with chorea, as the first of my two cases demonstrates it. The experimental investigations of Landsteiner, and Popper, Leiner and Wiesner, Landsteiner and Levaditi, Strauss and Hunton, Flexner and Lewis with regard to transmissibility of anterior poliomyelitis in higher animals are paving the way to a new therapeutic serum.

The same endeavors may perhaps be directed toward the disease discussed in this brief clinical note. The association of an infection, generalized or local, with chorea, as related here, is more than a mere coincidence. Close observation will perhaps reveal in more than in a few cases a prodromal syndrome which happened to pass unnoticed because of the inconspicuousness of the manifestations exactly in the same manner as we learned from experience to consider the onset of acute poliomyelitis. If we wish to carry the pathogenetic analogy between these two affections further, we must turn our attention to pathologic findings. Autopsies in cases of acute chorea are rare. One of the most complete pathologic reports is that of Hudovernig.[1] He found marked vascular lesions in the central nervous system consisting of dilatation of capillaries, perivascular infiltrations with round cells and edema. Cellular changes are found in the cortex and they consist of a glandular degeneration. Vacuolation is seen in the cells of the cornu ammonis. There is also a slight ependymitis and leptomeningitis. He also found a large number of special corpuscular bodies (*Choreakörperchen*) disseminated in the vicinity of blood-vessels and especially in the medulla and pons at the level of the pyramidal pathways. Hudovernig's interpretation concerns chiefly these corpuscles which according to him have an irritative action on the pyramidal tracts and thus produce choreic movements. Whether the corpuscular bodies are specific of chorea is difficult to say. Nevertheless the presence of vascular changes typical of an inflammatory state; also the pres-

1. Arch. f. Psychiat., xxxvii, 1, 1903

ence of cellular changes in the cortex analogous to those in acute poliomyelitis are interesting from our point of view. If the virus of acute poliomyelitis has a special predilection for the cells of the anterior cornua in the spinal cord and sometimes also for the cells of the nuclei in the medulla—in chorea the etiologic agent (to speak cautiously at present) has a predilection for the cells of the cortex and especially in the motor area and not infrequently also for the cells of the nuclei in the medulla. The latter assertion is based on the frequent involvement of the facial muscles and trapezius (seventh and eleventh nerves), also of the respiratory muscles (respiratory center in the medulla), which was so well emphasized recently by W. W. Graves.[2]

The conclusion to which the few considerations lead is that similarly to acute poliomyelitis, acute chorea is probably associated with some infectious element. The onset of the disease and its pathologic anatomy render the two affections analogous. The fundamental difference lies in the fact that in one disease the motor cells are being destroyed, hence the paralysis, in the other disease the motor cells undergo irritation, hence the twitching. The destructive effect in the former and the irritating effect in the latter point to a difference in the virus in the two affections. As a final feature of interest in this connection may be mentioned the experiments of P. Guizetti.[3] He injected cultures of staphylococci under the dura mater and in both carotids in dogs and obtained spasmodic movements partly resembling chorea. It is possible that a certain variety of staphylococcus is specific in chorea, but so far it has not yet been determined. Continuous work in this direction may eventually lead to the discovery of the etiologic factor and, therefore, of a therapeutic serum.

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## UNUSUALLY QUICK RASH FOLLOWING INJECTION OF DIPHTHERIA ANTITOXIN

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The usual length of time, elapsing between the subcutaneous injection of a dose of diptheria antitoxin and the following skin reaction is given by various writers as varying between twenty-four and seventy-two hours. The following case showed an unusually quick reaction:

*History.*—M. K., boy, aged 6, was seen by me twenty-four hours after he was taken ill. I found him in bed with temperature 101.4 F., pulse 104, respiration 23, and complaining of difficulty in swallowing. A pharyngeal examination showed a typical picture of diphtheritic exudate on both tonsils and spreading partly up the pillars of the fauces. A later bacteriologic test by the New York City Department of Health confirmed the diagnosis of diphtheria. I immediately gave a subcutaneous injection of 3,000 units of diphtheria antitoxin of New York City Department of Health into the tissues of the abdominal wall, and after a few minutes left the patient. I was gone about ten minutes when I was recalled by the mother, who told me that the boy's body had "broken out all over." I returned and found the boy covered with urticarial wheals varying from the size of a lentil to that of a bean. This rash lasted for about thirty-six hours, gradually abating in severity and the boy finally made an uneventful recovery.

2424 Seventh Avenue.

2. Graves, W. W.: A Study of the Respiratory Signs of Chorea Minor, THE JOURNAL A. M. A., Jan. 30, 1909, p. 364.
3. Riv. sperimentale di freniatria, December, 1901.

## ESSENTIAL HEMOSPERMIA

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Hemospermia, or blood in the seminal discharge, occurring during the course of an acute inflammatory condition involving the posterior urethra, or adnexa, is sufficiently common as to excite no especial interest.

Ricord believed the source of such bleeding to be the testicle and epididymis. Nelaton, among others, thought the condition to be due to urethral stricture. The present belief is that when the seminal discharge occurring during the course of an acute urethritis is blood-stained, the site of the bleeding is usually the prostatic urethra.

It is well recognized, however, that the blood may come directly from the vesicles as a symptom of a severe acute vesiculitis. Dr. Eugene Fuller[1] says that where the mucous surface of the vesicles is granular, bleeding may be free, occasionally producing severe spermatic colic by overdistention.

Ulzmann differentiates the source of the bleeding by assuming that when the blood comes from the prostate, or prostatic urethra, the dried stains on the linen appear irregularly colored, while in bleeding from the vesicle, the stains appear evenly colored, showing an intimate mixing of the blood with the semen. Much the same idea has been advanced by Guyon.

Such fine-drawn distinctions appear uncalled for, since it is not at all difficult to obtain separate prostatic and vesicular secretion by careful rectal stripping of these regions.

My object in writing this paper, however, is to report briefly two cases which recently came under my notice, and which, for want of a better designation, I have called "essential hemospermia."

Bleeding from the seminal vesicles without any assignable cause is referred to so rarely, and then so briefly, in medical literature as to give the impression that it must be of very unusual occurrence.

Tuberculosis, syphilis, and malignancy are given as possible etiologic factors in obscure cases of vesicular hemorrhage. But we must recognize a certain proportion of cases in which no cause can be discovered and in which prompt and permanent recovery negatives any serious disturbance.

R. Cantalupo[2] reports in detail a case of bleeding which he attributed to sexual overindulgence. But the common tendency to excesses among men, and the rarity of hemorrhage from the healthy vesicle, would seem to cast doubt on excessive coitus as a cause. Some writers (Gulliot, Robin) have on the other hand attributed bleeding to extreme continence.

A plausible explanation is that advanced by Linzar, who described it as a hemorrhage *ex vacuo*. During ejaculation, the sudden emptying of the long-distended vesicle, he says, relieving the accustomed support on the

1. Personal communication.
2. Cantalupo, R.: Sull'emospermia non-inflammatoria. Arch. internaz. di med. e chir., Napoli, 1897, xiii, 165.

blood-vessels, may determine a complete rupture of the vessel coats. Such bleeding is similar to the hemorrhage which occasionally occurs on too suddenly emptying the bladder after prolonged retention. In one of my cases, at least, hemorrhage *ex vacuo* would seem to offer a plausible explanation for the bleeding.

CASE 1.—The patient, 27 years old, had been well of an obstinate anterior urethritis for about one month. Because of this infection he had been continent for several months, during which time he had had no seminal emissions. On coitus he noticed the discharge was deeply blood-stained, and consulted me the following day. Alternate stripping of the prostate and vesicles showed the prostatic secretion and that from the right vesicle to be normal. The expressed contents of the left vesicle showed considerable fresh blood —no pus.

Treatment consisted of stripping the vesicle every other day. One week later it showed only a trace of old blood. Seen repeatedly since, he has remained well.

CASE 2.—The patient was a Protestant minister, aged 42, married three years, one child. He had no venereal history, had never indulged in sexual excesses, and knew of no cause to which to attribute his trouble. For five or six weeks before, he noticed that the seminal discharge, occurring either while asleep or during coitus, was deeply stained with blood. Nightly emissions had been of frequent occurrence since bleeding was first noticed (probably due to the distention of the vesicle with blood).

Rectal examination showed the prostate and left vesicle to be normal. The region of the right vesicle was slightly tender to pressure and the expressed secretion was deeply blood-stained, but contained no pus. Massage was practiced for six weeks, at the end of which time only a trace of old blood could be expelled. Six months later he reported himself as being altogether well.

124 Baronne Street.

## HEMATOMA OF VULVA DURING LABOR

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WILSON, N. C.

*History.*—Mrs. F., primipara, had been in labor about four hours, dilatation of the cervix had progressed normally and she was in second stage with everything pointing to a speedy delivery. The pains were rather hard, accompanied by a great tendency to bear down, so I had commenced to give chloroform with each pain. About ten minutes after my last examination, she began to complain of a sharp cutting pain in the right labium. On examination I found a tumor about the size of an orange. In pressing my hand over it to determine whether or not it was a hernia, I noticed at once that it was rapidly enlarging.

*Treatment.*—Recognizing what I had to deal with, I pushed the chloroform and had the nurses prepare things for opening and stopping the hemorrhage, which had now reached the size of a child's head, and had, indeed, very much the appearance of a child's head just delivered. At this stage the tumor ruptured, producing a ragged rent about two and a half inches just at the junction of skin and mucous membrane and I am quite sure that I removed more than three pints of clotted blood. The cavity was packed with sterile gauze. I then found the child's head pressing against the perineum and in very short time the infant was delivered.

*Remarks.*—The patient had an uneventful puerperium without rise of temperature. The cavity left by the hematoma was irrigated every day and in about ten days there was very little sign left of what seemed at the time to be a serious condition.

## PURPURA HEMORRHAGICA IN PERTUSSIS

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RUTLAND, PA.

The fact that numerous contagious diseases have less severe manifestations as a rule during warm months has led to the popular opinion that it is a good thing for a child to contract such diseases as scarlet fever, measles, mumps, and whooping-cough when the mild form prevails. Physicians owe it to the public to correct this erroneous impression. The following case which developed a rare complication illustrates the error of this opinion.

*History.*—F. M. W., girl, aged 4, residing in the country, previously a robust healthy child, contracted whooping-cough about June 1, 1910; the disease continued for six weeks. The weather was ideal. During the second week of the disease there developed areas of purpura hemorrhagica due to the mechanical cause. Every time there was a severe paroxysm of coughing, either the spot would enlarge or a new focus of hemorrhage would appear and then gradually enlarge with subsequent paroxysms. These hemorrhagic areas were distributed especially over the arms, legs and back. Some spots appeared in the groins and one on the face. They were as sensitive as if due to contusion. When the whooping-cough yielded the hemorrhage stopped and gradually the areas resumed the normal aspect. The heart, which at the beginning of the disease had a normal action, has been left with a valvular lesion which will be a permanent menace to the child's life. The resistance of the child to disease has been lowered; and this, I believe, is the case with every contagious disease no matter how mild.

# *Therapeutics*

### ARTERIAL HYPERTENSION

Dr. Arthur R. Elliott, Chicago (*American Journal of the Medical Sciences*, July, 1910), so sensibly discusses this subject of ever-increasing importance that it deserves more than a passing notice. Increased blood tension which is now early recognized and actually measured is the forerunner of all that may happen to a well man. In other words, most other diseases are caused by accident, it may be medical accident or surgical accident, and even pneumonia is a medical accident. Increased blood pressure is an indicator of what is really going on inside of a man, and represents primarily the circulation of irritants or over-stimulation from nervous excitement and tension. Whichever be the cause, the etiologic factor must be removed or the condition will sooner or later cause cardiovascular-renal disease with its varying serious sequelæ. The highest blood pressure occurs in renal insufficiency, and the greater the insufficiency or the nearer uremia, the higher the tension. If an actual arteriosclerosis is present the tension may be apparently high but actually low.

Elliott does not discuss the nervous side of hypertension; probably he thinks in this rapid age it is useless to discuss lowering such tension. The only possible successful method of lowering this kind of tension is to urge such a patient to go to a quiet place for a complete and absolute change of duties and environment. Nothing else, in this age, is successfully advised; in other words, any other advice to remove nervous excitation is not taken.

Elliott's paper treats mostly of the irritants absorbed from the intestine as the cause of hypertension, and of course anything that modifies the absorption of these irritants will lower the blood pressure. The diet, then, is the first thing to be regulated, and Elliott urges that in regulating the diet common sense be used and the patient be individualized. Certainly any laboratory dogma which simply declares that flesh protein must be absolutely withdrawn from the diet and vegetable protein substituted, and which often does not carry with it limitation of vegetable protein or carbohydrates, is a therapeutic mistake. No one disputes the fact that the amount of meat eaten by these patients who have hypertension is generally too abundant. On the other hand, a certain amount of meat, either limited to once a day or a small amount twice a day, is to most men, who must labor either mentally or physically, more likely to meet the needs of their organisms and prevent muscular weakness than is a vegetarian diet. Anything that is found to cause intestinal indigestion more than any other article of food should be prohibited, but excessive amounts of vegetable proteins, starches, and fruits to make up for the withdrawal of meat is generally inadvisable and often produces harm. Whether or not the water intake should be reduced depends on whether the heart is sufficient or not. With a sufficient heart a patient should drink plenty of water; with an insufficient heart it should be restricted. Elliott advises that these patients learn to limit their intake of salt before it is necessary to withdraw it absolutely from their diet. This means not extra salting the food that comes on the table. This is a wise suggestion, because as soon as edemas occur from renal insufficiency, and even from cardiac insufficiency, the amount of salt in the food should be limited. A successful diet is shown not only by a reduction of the blood pressure, but by a stout patient losing some of his weight, and a thin patient, if not actually gaining in weight, not losing any more.

Elliott believes, as do we, that in spite of the belief of some clinicians that increased blood pressure is compensatory and is Nature's method of taking care of the individual and properly supplying blood to the various parts of the body, that especially when there are symptoms caused by the increased pressure, and even if there are no special symptoms, that it is better and advisable to reduce the pressure. The symptoms positively calling for this treatment are dizziness, full-headedness, short breath, a general feeling of cardiac oppression; these on least exertion and perhaps without exertion.

Elliott urges, and it certainly should be emphasized, that in the first attempt to reduce the blood pressure with drugs such as the nitrites, but small doses should be used and the result very carefully watched. A pressure that is excessive may be so quickly reduced as to cause an unpleasant and even serious syncope by lowering the blood pressure at the base of the brain. He advises after the administration of a small dose of nitroglycerin, from 1/200 to 1/100 of a grain, that the blood pressure be watched for half an hour. If it causes a decided fall of blood pressure, it shows that the blood vessels are not sclerosed and are able to respond to the dilator. The amount of reduction thus found will be an indicator of the proper dose, and of the frequency with which it should be given.

If there are signs of cardiac insufficiency which must come sooner or later in every instance of continued high blood pressure, vasodilators should rarely be used at all, except in emergencies of cardiac pain. Elliott thinks sodium nitrite in small doses, from 0.03 to 0.20 gram (½ to 3 grains), three or four times in twenty-four hours, is the best nitrite to use. It certainly acts longer than does nitroglycerin. On the other hand, it sometimes irritates the stomach. It is astonishing how well nitroglycerin, administered three or four times in twenty-four hours, reduces the blood pressure when the arteries are not seriously diseased, and even a dose as small as 1/400 of a grain, given three or four times a day, will often cause a positive lowering of the pressure with an improvement of all symptoms.

Various physical methods of reducing pressure by baths, hot air, and graded exercise have been so recently referred to in this department that they need only be mentioned here.

If there are signs of an insufficiency of the heart which, as above stated, must occur sooner or later to these patients, vasodilators would rarely be needed, and small doses of digitalis will certainly do good and will rarely raise the blood pressure too high. If there is renal insufficiency and actual renal disease some other drug than digitalis should generally be used, such as strophanthus.

If physical signs of cardiac weakness are not in evidence, the heart may still be insufficient, as will be readily shown by taking the blood pressure after slight exercise. If with increasing rapidity of the heart from the exercise the blood pressure either does not rise at all or rises but a moment to fall below what it was when the patient was at rest, the heart muscle is surely insufficient. Elliott urges that such an examination be made before it is decided that vasodilators are indicated. Under these circumstances, with a heart impaired in its ability to do extra work and yet not so impaired that edema or other signs of lack of compensation are present, the best treatment is a combination of small doses of digitalis and nitroglycerin. This, with a corrected diet and the interdiction of any excessive or sudden exercise, and the establishment of such graded muscular exercise as will increase the muscle and surface circulation, will often restore a perfect compensation.

However well a patient with hypertension may be, he should be cautioned against any sudden spurt of muscular exercise or any prolonged severe muscle strain.

## ANAPHYLAXIS IN ITS RELATION TO TREATMENT

It is an interesting and instructive psychologic study to observe the various opinions formed of therapeutic measures by different practioners. For instance, to most men who had watched several children with diphtheritic laryngitis progress to what experience taught was inevitable death, the first case snatched from such a pitiable fate by the use of diphtheritic antitoxic serum was sufficient to bring conviction that the new remedy was a wonderful addition to our resources. Statistics of a series of cases was not a necessary preliminary to the adoption of the remedy. On the other hand the observation of an occasional sudden death after the use of the new remedy was ample demonstration to some physicians that it was a dangerous thing and should not be used. Later studies have shown why sometimes a fatal result followed the use of this generally beneficent remedy.

The hypersensitiveness of some patients from inheritance or from idiosyncrasy to germ diseases, toxins, and serums has been termed anaphylaxis.

In a paper read before the Johns Hopkins Medical Society, the Director of the Hygienic Laboratory, U. S. Public Health and Marine Hospital Service, Dr. John F. Anderson (*Bulletin of the Johns Hopkins Hospital*, July, 1910), has presented this subject in such a clear manner that a brief abstract of the paper will be of value to the clinician.

Since the seventeenth century it has been known that the blood of certain animals is poisonous to man when injected into his circulation. It has been found later that the blood serum of an animal of one species is often poisonous when injected into an animal of another species. The serum of the horse and donkey to a large extent does not possess this poisonous quality. In some cases, however, the injection of horse serum into man is followed by a combination of symptoms which has been described by von Pirquet, and called by him the "serum disease." In rare instances the injection of horse serum into man has been followed by sudden death.

Experimenting with guinea-pigs it was found that horse serum when injected for the first time is comparatively innocuous. If, however, a dose of 0.001 c.c. of horse serum is injected, and after waiting fourteen days a second larger dose is administered, a fatal result almost invariably follows. Other proteins such as egg white or milk act in the same way. This phenomenon is interpreted as meaning that "the first injection of the foreign protein has so changed the mechanism of the animal's organism as to render it very susceptible to the second injection."

Anaphylaxis is a name coined by Richet from two Greek words *a n a* against, and *p h u l a x* guard, or *p h u l a x i s* protection, to indicate the opposite condition to that indicated by prophylaxis, which means preventive of disease. But the former term is somewhat misleading, for the phenomena to which it is applied do not act against the protection of the body against disease, but, on the contrary, often constitute "an important step in the protection of the organism against a certain large class of infections."

Anderson points out that the condition of anaphylaxis may be transmitted from the mother, or may be acquired, and also that it may be brought about by the introduction of any strange protein into the body. He cites as a well-known clinical instance of anaphylaxis that induced in an individual by a second vaccination. In a primary vaccination the period of inoculation is about four days, and then the local symptoms appear, and also more or less constitutional disturbance. In a vaccination following a successful vaccination after several months "the period of inoculation is much shortened, and the clinical reaction very much lessened. The power to react has been so changed that instead of an incubation period of four days, we have an incubation period of twenty-four or thirty-six hours. This acquired power of immediate response is an evidence that protective bodies have been formed within the organism; but there is no absolute immunity in this class of infections though, on account of the power of immediate reaction, the individual is protected.

"Other well-known clinical instances of anaphylaxis are the tuberculin and mallein reactions in tuberculosis and glanders. Neither of the bacterial products is harmful in moderate amounts to a healthy individual, but a person suffering from tuberculosis or glanders will respond to a very small amount of tuberculin or mallein respectively."

Recurring to the experimental studies on guinea-pigs, it was determined that "the toxic action following the injection of the serum is due to a protein in the horse serum and is entirely independent of the antitoxic properties of the serum. It would be exceedingly unfortunate if the studies on anaphylaxis should in any way prevent the usage of diptheria antitoxin, or any other therapeutic serum, when it is indicated."

"The symptoms following the injection of horse serum into a susceptible guinea-pig are exceedingly characteristic." They appear rapidly, and consist of restlessness, distress, respiratory embarassment, scratching of the mouth, coughing, sneezing, rapid and irregular respiration, deep inspiratory efforts with sinking of the upper part of the sternum, low blood pressure, paralysis, convulsions and death. The heart continues to beat after respiration has ceased, sometimes for thirty minutes.

As antidotes to this condition have been suggested atropin sulphate, chloral hydrate, oxygen, and adrenalin.

It has been found that guinea-pigs could be "sensitized" by feeding them with the foreign protein for several days. After the appropriate interval, fourteen days, they will react to an injection of the protein.

It may be through some such action as this that "certain individuals have a peculiar idiosyncrasy for certain articles of diet; also, why certain individuals who have never previously received an injection of foreign protein should be so acutely sensitive to a first injection of horse serum." The toxicity of the serum does not have as much influence as the susceptibility of the individual in determining an untoward result.

It has been noted "that many of the cases of sudden death following the first injection of serum in man have been in asthmatics or in persons who have an idiosyncrasy to horses. That is, there are certain individuals who show peculiar symptoms, sometimes resembling hay fever or asthma, when in the vicinity of horses or horse stables; and these individuals are the ones who are so extremely susceptible to a first injection of serum. The knowledge of the fact that the injection of horse serum into such persons is a danger which must certainly be taken into consideration in the use of antitoxin."

Finally it should be remembered that the transmission of anaphylaxis takes place through the mother, and not through the father, and that a child of a tuberculous mother is very rarely born with the seeds of the disease in its system, but that there is transmitted from the mother to the child a tendency to the disease.

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**An Organism Isolated from Water, Agglutinated by Typhoid Serum.**—W. H. Frost (Bull. No. 66, Hyg. Lab., U. S. P. H. and M.-H. Service) has isolated from the water of the Potomac River after filtration an organism which he named *Pseudomonas protea* which has the property of being agglutinated quite constantly by the serum of typhoid patients. The agglutinins which produce this effect are not entirely indentical with those agglutinating the typhoid bacillus. The results of absorption experiments indicate that the agglutination of *Pseudomonas protea* by specific typhoid agglutinating serum is affected by combination with a portion of the specific typhoid agglutinin; that it is therefore a "group" agglutinin. Animals injected with cultures of *Pseudomonas protea* develop agglutinins for this organism, but do not develop agglutinins for *B. typhosus* or other organisms of the colon-typhoid group. The organism is agglutinated by a larger percentage of cases than is the *B. typhosus*, the difference being especially marked in the earlier stages of the disease. The serum of typhoid fever patients often agglutinates this organism in higher dilutions than it agglutinates *B. typhosus*. The organism is not found in Potomac water before filtration.

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[For other information see second page following reading matter]

SATURDAY, OCTOBER 1, 1910

## "ARSENO-BENZOL"—"606"—"ARSEN-PHENOL-AMIN"

The intense interest shown in the new remedy, "arseno-benzol," for the treatment of syphilis—Ehrlich and Hata's "606"—as well as a revival of interest in the use of sodium cacodylate as shown by A. Heym,[1] and more recently by J. B. Murphy,[2] makes opportune a discussion of the chemical structure of "606," sodium cacodylate and of atoxyl and its acetyl derivative, arsacetin. Sodium cacodylate is the sodium salt of cacodylic or dimethyl-arsenic acid, which differs from arsenic acid by replacement of two hydroxyl groups by two methyl groups. Thus:

$$\underset{\text{Arsenic Acid}}{O\,As.(OH)_3} \rightarrow \underset{\text{Cacodylic Acid}}{O\,As.(CH_3)_2OH} \rightarrow \underset{\text{Sodium Cacodylate}}{O\,As.(CH_3)_2ONa}$$

Sodium cacodylate, as described in New and Non-official Remedies, is a relatively permanent salt of arsenic acid quite soluble in water and faintly alkaline towards litmus but neutral toward phenolphthalein. Atoxyl is sodium arsanilate, the sodium salt of arsanilic acid. Arsanilic acid differs from arsenic acid in that one hydroxyl group of the arsenic acid is replaced by an amino-benzene or amino-phenol or anilin group. Thus:

$$\underset{\text{Arsenic Acid}}{O\,As.(OH)_3} \rightarrow \underset{\text{Arsanilic Acid}}{O\,As.(C_6H_4NH_2)(OH)_2} \rightarrow$$

$$\underset{\text{Atoxyl}}{O\,As.(C_6H_4NH_2)(OH)ONa}$$

Atoxyl also is a relatively stable salt of arsenic acid quite soluble in water and practically neutral in reaction. Arsacetin or sodium acetyl arsanilate is the sodium salt of acetyl arsanilic acid, which latter differs from arsanilic acid in that one hydrogen atom of the amino group is replaced by an acetic acid residue. Thus:

$$\underset{\text{Arsanilic Acid}}{O\,As.(C_6H_4NH_2)(OH)_2} \rightarrow \underset{\text{Acetyl Arsanilic Acid}}{O\,As.(C_6H_4NH.CH_3CO)(OH)_2} \rightarrow$$

$$\underset{\text{Arsacetin}}{O\,As.(C_6H_4NH.CH_3CO)(OH)(ONa)}$$

The Ehrlich-Hata preparation—"606"—is but distantly related chemically to sodium cacodylate, atoxyl and arsacetin. It has recently been patented by a German firm, Meister Lucius & Brüning, which will control its manufacture and sale. Its structural formula is:

$$NH_2.OH.C_6H_3.As:As.C_6H_3.OH.NH_2$$

According to the patent specifications, it is obtained from nitro-phenol-arsinic acid, which, on reduction, is changed to amino-phenol-arsinic acid, which, by still further reduction, yields "606," a derivative of arseno-benzene ($C_6H_5.As:As.C_6H_5$). The formula above shows that "606" contains two atoms of tri-valent arsenic united, on the one hand with each other, and on the other hand having replaced a hydrogen atom in a benzene molecule. Each benzene molecule also contains one hydroxyl or phenol group and one amino or anilin group. The chemical constitution may be indicated by the name di-amino-hydroxy-arseno-benzene and the relative position of the several groups shown thus:

3-diamino-4-dihydroxy-1-arseno-benzene

This name has been abbreviated to arseno-benzol or arseno-benzene, which, in a way, is unfortunate, in that it is the name which properly belongs to another body. As it is desirable that the shortest name truly indicative of its composition should be used in the literature, the term "arsen-phenol-amin" is recommended as an abbreviated scientific synonym for this new body which has unfortunately been introduced into medicine under the term "606." Since this product is patented, however, it may be given a catchy rather than a scientific name.

To understand the chemical properties of this body, it should be noted that the arsenic is in the unstable trivalent form and not in the stable penta-valent form, as in sodium cacodylate, atoxyl or arsacetin. Furthermore, it should be said that the two phenol or hydroxyl groups give the substance a weak acid character enabling it to form weak salts with strong alkalies just as phenol forms them with sodium hydroxid, etc. On the other hand, the two anilin or amino groups give it basic properties, and just as anilin combines with hydrochloric acid to form a salt, so this substance combines with hydrochloric acid to form a chlorid. Since the molecule contains two anilin groups it combines with two molecules of hydrochloric acid. These anilin groups, however, impart but weak basic properties to the molecule, and hence the chlorid, when dissolved in water, is decomposed with liberation of hydrochloric acid, so that the solution is strongly acid. "Arsen-phenol-amin" (or "606"), is very unstable and is put on the market in the form of its hydrochlorid, which, owing to its acid character, however, cause injections of it to be very painful. For this reason the hydrochlorid is treated with an amount of alkali exactly sufficient to combine with the hydrochloric acid of the salt and to liberate the base "arsen-phenol-amin" which is insoluble and which is injected in the form of a suspension in water.

It is impossible at this time to determine the actual value of the drug, but certain deductions can be made

1. New York Med. Jour., Oct. 30, 1909.
2. THE JOURNAL A. M. A., Sept. 24, 1910, p. 1113.

from the large number of cases already reported. There is no doubt that this new remedy produces remarkable results in a surprisingly short time. In some desperate cases of syphilis a cure, temporary at least, followed a single injection; in many of these mercury and other antisyphilitics had totally failed. The question as to the permanency of the cure is not answered, and only time can answer it. But if such splendid results may be obtained by one injection, it would seem probable that the remedy would bring about a permanent cure when its action is more clearly understood, and the treatment followed out for a longer or shorter time.

Finally, physicians should remember that this new discovery is, after all, an arsenic preparation. In the past all new arsenic preparations, though at first recommended as wonderfully active and marvelously free from the toxic effects of arsenic, have in the end been found to possess, in varying degrees, the potency for harm common to this element. It will be fortunate if this new discovery is not found to have similar drawbacks.

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## WHO PAYS THE BILLS?

Newspaper men are not easily misled as to motives, neither are they slow to recognize the real forces behind an effort to influence public sentiment. An editorial in a recent number of the Baltimore *Evening Sun* shows how the better class of newspaper editors regard the strenuous and well nigh hysterical efforts now being made to simulate a popular uprising against the awful iniquity of national health legislation:

"Two objections to the proposed department of health have been raised. The first comes from the more fanatical adherents of the so-called metaphysical healing arts. These persons hold that the art of medicine, as it is practiced, say, at the Johns Hopkins University, is a snare and a delusion. They object to being vaccinated, they deny that typhoid is infectious, they maintain that Dr. Welch is an ignoramus, they believe that magic words are more efficacious against hydrophobia than Pasteur's vaccine. Finally, they fear that, if a national health department is established, its head will induce Congress to pass laws against them. A mere statement of the argument of these folk is all the answer it needs. They have a right to their beliefs, however ridiculous, but they have no right to put the rest of us in peril.

"The other objection to the proposed department is voiced by those who fear that it will be controlled by the American Medical Association, an organization of allopathic physicians. The grounds of this fear are not quite apparent, but, assuming it to be well grounded, what of it? The foremost physicians and surgeons of America belong to the Association; it is in the forefront of the battle against disease; its objects are precisely those of the department under consideration. A nation with such men guarding its health would be a nation to be envied. They are by no means perfect as men, for human perfection is very rare in the world, but as physicians they belong to the most scientific, progressive and competent of all schools.

"These are the only objections we have ever heard to a national department of public health. We believe that both of them are unutterably silly."

As the *Sun* well says, the mere statement of the arguments of the National League for Medical Freedom is all the answer that is necessary. But the attack on the Owen Bill is only a pretext. The American Medical Association is the real target. The forces behind this movement are endeavoring to take advantage of the popular feeling against trusts and monopolies by branding the American Medical Association as a "doctors' trust", a designation, by the way, which originated with certain so-called medical journals which derived their support from nostrum venders.

Evidently, the manufacturers of "baby-killers", sophisticated and adulterated foodstuffs, cheap and bad whiskies under the guise of "family remedies", and fakers and swindlers doing business under the guise of physicians, hope that the American public and press will accept this designation without asking for proof or evidence, and that by such methods the American Medical Association and its work can be discredited in the public estimation. We related last week that "the delegates smiled" when the members of the committee on resolutions, at the Conservation Congress at St. Paul, were overwhelmed with a flood of telegrams carefully arranged for beforehand, protesting against the endorsement of a national department of health. Truly, newspaper editors and managers must smile with equal persistency when "copy" is received for half-page advertisements at a daily cost of $25,000, denouncing the national organization of the medical profession as a "doctors' trust." Newspaper men know the cost of a general advertising campaign. They also know that only those who are financially and mercenarily interested in blocking the work which the American Medical Association is doing, and who fear to have any further light thrown on their nefarious doings, would furnish the money for such an extensive and expensive advertising campaign. The National League for Medical Freedom asks no dues of its "members", yet it has used large quantities of the most expensive newspaper advertising space. Who pays the bills, and whence comes all the money?

Certainly it does not come from the few homeopaths who have joined the league, nor from the few eclectics, nor from the small number of osteopaths; and surely the Christian scientists are not shouldering this enormous burden. The obvious conclusion is that the money comes from those exploiters of human weakness and credulity whose fraudulent practices have been exposed by the American Medical Association, and whose pocketbooks have been injured in consequence.

# Current Comment

## THE EFFECTS OF TOBACCO ON BODY AND MIND

While it has been shown that nicotin acts as a poison in the lower animals, depressing the nervous, circulatory and respiratory systems, there is considerable diversity of opinion as to the effects of tobacco on human beings. There is, however, a fairly well-established belief that even the moderate use of tobacco is not without possibilities of evil, while excessive use is distinctly harmful. The effects, naturally, are more pronounced in youth and adolescence than in later life. Some observations made by Dr. George L. Meylan,[1] of Columbia University, are interesting in this connection. In a study of 223 college students from two classes it was found that 115 were smokers and 108 non-smokers. The smokers were a little older than the non-smokers, and they presented only corresponding differences in measurement (weight, height, lung capacity, total strength). On the other hand, the non-smokers exhibited a distinct advantage in scholarship, but in this connection other considerations must be taken into account. For one thing, the smokers participated in larger proportion than the non-smokers in athletics and in fraternity membership, and the scholarship-records of smokers, athletes and fraternity members alike were lower than those of other students. Besides, there is a leisure-class type of college students, who smoke and go in for athletics and fraternity membership, but who, as a rule, do not attain high grades of scholarship. The non-smoker, on the other hand, is usually ambitious, industrious and self-dependent, and with less inclination and opportunity for the athletic and social aspects of college life. There will be no serious dissent from the following conclusions: The use of tobacco by adolescents is injurious; there is no scientific evidence that the moderate use of tobacco by healthy mature men produces any beneficial or injurious physical effects that can be measured; there is an abundance of evidence that tobacco produces injurious effects in (a) certain individuals suffering from various nervous affections, (b) persons with an idiosyncrasy with respect to tobacco, (c) persons who use it excessively. It is generally conceded that the use of tobacco by college students is closely associated with idleness, lack of ambition, lack of application and low scholarship, though these may not be due entirely to the tobacco.

## A YEAR AS INTERN IN A HOSPITAL

The time is not far distant when a physician, before receiving license to practice medicine, will be required, after taking the four-year medical course, to spend a year as intern in a hospital. At present, the majority of the graduates of leading medical colleges succeed in obtaining such work and the deans of a number of these colleges say that as a rule the students who do not take these internships are the very ones who most need them. As has been reported, six medical colleges have provided an optional fifth year of hospital work for which the degree of M.D. *cum laude* is granted. It is now reported that beginning in the fall of 1911 every student matriculating in the medical department of the University of Minnesota will enter on a five-year medical course, the fifth year to be spent in a hospital as an intern. This is in accordance with the "ideal standard" for physicians suggested by the Council on Medical Education and adopted by the House of Delegates of the American Medical Association at Portland in 1905.

1. Popular Sci. Monthly, August, 1910, p. 170.

## NON-ENFORCEMENT OF ANTISPITTING ORDINANCES

From information recently collected it appears that out of seventy-four cities reported as having antispitting ordinances only thirty-six had made any arrests. It is found that in the enforcement of these ordinances health officers are somewhat more vigilant than the regular police. Newton (*Journal of the Outdoor Life*, August, 1910) says that the real reason for the non-enforcement of the ordinance is indifference on the part of citizens, lack of civic pride and failure to appreciate the danger from the unrestrained practice of the habit. He says that the police fail to enforce it as they regard it as merely intended to abate a minor nuisance, but that health officers are primarily responsible, as the community looks to them for leadership in all health matters. It seems to require specially detailed officers or inspectors. It is probable, however, that the public agitation and the numerous means of calling attention to the danger have led to a very decided abatement of the nuisance.

## TWO DISEASES TO BE RECKONED WITH

While infantile paralysis and pellagra are not new diseases, their occurrence hitherto has been so comparatively infrequent in this country that no statistical segregation of them as causes of death has been made in the mortality statistics of the registration area of the United States. According to a bulletin of the Bureau of the Census in 1909, 569 deaths were due to acute anterior poliomyelitis and 116 to pellagra. Only 23 deaths from pellagra were reported in 1908. The figures for 1910 will no doubt show many more deaths from the former disease on account of its prevalence and the study and attention given to it. As the registration area includes only a small portion of the country where pellagra occurs most frequently, the actual number of deaths from this disease will not be known until there is a more complete registration of vital statistics.

## HEALTH EDUCATION IN FLORIDA

The Florida State Medical Society has inaugurated a campaign against malarial fever and has issued four bulletins for public distribution through the press of the state and otherwise. These bulletins are short and adapted to popular understanding, being written to correct erroneous ideas regarding the transmission of malaria and to emphasize the importance of mosquitoes as a means of disseminating diseases. In one bulletin the experience gained in building the Panama Canal is outlined and a number of popular misconceptions corrected. Some of the views previously held by the medi-

cal profession and still believed in by the public are referred to—such as that malaria is transmissible by the atmosphere, through dust-laden air, noxious gases, night air, odors and vapors arising from decaying vegetable matter, recently turned earth, swamps, impure drinking water, etc. The bulletin shows how these apparent causes are in reality connected with the development of malaria only in so far as they make possible the propagation of mosquitoes. Another bulletin discusses the individual attack and emphasizes the necessity of proper treatment. These bulletins are short and interestingly written and are being generally quoted by the press of the state.

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### THE PUBLIC CONSCIENCE AWAKENING ON PREVENTABLE DISEASE

The public interest in health conditions is rapidly increasing. Evidence of this fact can be found in the changing attitude of newspapers toward public health problems and the growing comprehension of their importance. For instance, the recent editorial comment in the *New York World* on typhoid fever would have been impossible ten years ago:

> Every life lost by typhoid is a wasted life. It is absolutely preventable. People who live in marble halls without caring whether poison runs in the pipes behind them; the very rich who spend millions in display, but neglect sanitation; college professors caught unaware by epidemics like that in Ithaca—these have themselves to blame if the disease occurs. Typhoid originating in any community disgraces it.

In former generations, epidemics of typhoid fever and other filth diseases have been regarded as dispensations of Providence just as a high death-rate has been looked on as a natural ratio which could not be altered. The *World* has emphasized one of the most important principles of the coming gospel of health—*i. e.*, that the occurrence of preventable diseases is a discredit to the community.

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## *Medical News*

### COLORADO

**Personal.**—Dr. George A. Moleen, Denver, starts for Europe this week.——Dr. William C. Bane, Denver, who was operated on recently for appendicitis, is making a good recovery.——Dr. William W. Grant, Denver, has recovered from injuries received in a recent collision between his automobile and a street car.——Dr. Hubert Work, Pueblo, has been elected state chairman of the Republican party.

**Bequests.**—The late Joseph Shoenberg, Denver, bequeathed $25,000 to the National Jewish Hospital for Consumptives in that city.——By the will of the late Louis H. Kaplan, Anniston, Ala., $15,000 is devised to a hospital for consumptives in Denver. The executors have asked the probate court to determine whether this legacy shall be paid to the National Jewish Hospital for Consumptives or the Jewish Consumptive Relief Society.

**State Society to Meet.**—The annual meeting of the Colorado State Medical Society will be held in Colorado Springs, October 11-13, with headquarters at the Antlers Hotel. The entertainment provided for the society includes a ball on the first night, a jungle party or barbecue in one of the canyons on the second night, and a banquet at the Antlers Hotel, the third night of the meeting. The mornings are to be devoted to the work of the society, and the afternoons and evenings to entertainment of the delegates.

### CONNECTICUT

**Infectious Diseases.**—During August 32 cases of measles were reported in 14 towns, 63 cases of scarlet fever in 33 towns, 6 cases of cerebrospinal fever in 4 towns, 36 cases of infantile paralysis in 16 towns, 127 cases of diphtheria in 30 towns, more than 88 cases of whooping cough in 17 towns, 224 cases of typhoid fever in 54 towns, and 239 cases of tuberculosis in 45 towns.

**Epileptic Colony.**—The board of trustees of the Connecticut Colony for Epileptics held its first meeting September 20, and elected Dr. Max Mailhouse, New Haven, president; Dr. William L. Higgins, South Coventry, secretary. Dr. John M. Mountain is the third medical man on the board, which is composed of eight members, one from each county in the state. The superintendent of the colony will be elected in the near future.

### GEORGIA

**Appropriation for State and Not Local Sanatorium.**—The appropriation of $50,000 noted in THE JOURNAL, September 17, made by the Georgia legislature, was for the State Tuberculosis Sanatorium located at Alto, and not for the LaGrange Sanatorium, a private institution.

**Staff Shows Appreciation and Regret.**—The consulting staff of the Wesley Memorial Hospital, Atlanta, has adopted resolutions setting forth the excellent professional and faithful loving personal qualities of its associate, the late Dr. Abner Wellborn Calhoun, expressing its appreciation of the privilege of serving with him on the board, and its sorrow at his death.

**Society Meetings.**—At the fourth annual session of the Eighth District Medical Association of Georgia, held in Monticello, August 17, the following officers were elected: President, Dr. J. R. Robins, Siloam; vice-president, Dr. James D. Weaver, Eatonton, and secretary-treasurer, Dr. Dan H. DuPree, Athens (reelected).——The Pike County Medical Association was recently organized at Barnesville with Dr. John M. Anderson, Barnesville, president; Dr. William H. Aycock, Molena, vice-president, and Dr. Marvin M. Head, Zebulon, secretary.

**College Open.**—The Hospital Medical College, Atlanta, opened for its third annual session, September 15. Since the close of last session new laboratories have been added to the institution.——The Atlanta College of Physicians and Surgeons has recently received a gift of $50,000 to establish and equip laboratories of histology, physiology and embryology. Dr. Harry S. Bachman, Philadelphia, has been elected professor of physiology; Dr. Justin F. Grant, Morgantown, W. Va., embryology and histology, and Dr. Funk, Philadelphia, adjunct professor of bacteriology.

### ILLINOIS

**Personal.**—Drs. Alfred A. Knapp and Charles G. Farnum, Brimfield; Dr. and Mrs. William D. Hohmann, Kewanee; Dr. Thomas W. Curry, Streator, and Dr. and Mrs. George S. Isham, Dr. Joseph B. DeLee, and Dr. and Mrs. Thomas D. Palmer, Chicago, have returned from Europe.——Dr. Elijah S. Smith has succeeded Dr. William F. Burres, Urbana, as physician of Champaign county.——Dr. Hiram T. Hardy, Kaneville, who was operated on in Chicago recently for the removal of gallstones, has recovered and returned home.——Dr. and Mrs. Arthur Paul Wakefield, Springfield, have started for their post of duty at Chao-Hsien, China.

#### Chicago

**Resolutions of Sorrow.**—The Chicago Dermatological Society has adopted resolutions setting forth that in the death of Dr. James Nevins Hyde, the society has suffered an irreparable loss, the medical profession has lost a great teacher, and the community a model citizen.

**Hospital Notes.**—Arrangements have been completed for the laying of the cornerstone of the Iroquois Memorial Emergency Hospital at 87 Market St. A memorial tablet is to be placed in memory of those who lost their lives in the Iroquois fire.——The cornerstone of the new Deaconess Hospital at Morgan St. and 54th Place was laid with appropriate ceremonies, September 18.

### INDIANA

**Personal.**—Dr. Patrick H. Jameson, Indianapolis, is reported to be ill and confined to his house.——Dr. George W. Switzer, LaFayette, has been elected secretary of the Methodist Hospital, Indianapolis, vice Dr. Deloss M. Wood, Battle Ground, deceased.

**Sentenced and Paroled.**—In the Circuit Court, September 15, Dr. Charles G. Young, Washington, charged with having performed an illegal operation, is said to have changed his plea of not guilty to guilty, and to have been sentenced to imprisonment for from three to fourteen years in the state penitentiary, and to have been fined $100. He was released on parole, the commission in lunacy having decided that he was sane but a wreck from the excessive use of alcoholic stimulants.

## IOWA

**Personal.**—Dr. Gilbert G. Cottam, Rock Rapids, has disposed of his business and will locate for practice in Sioux Falls, S. D.——Dr. Samuel Druet, physician of the state reformatory, Anamosa, since 1898, has resigned, and Dr. Thomas C. Gorman, Anamosa, has been named as his successor.——Dr. J. Fay Cole, Oelwein, has been elected grand chancellor of the Knights of Pythias of Iowa.——Drs. Nicholas Schilling, New Hampton, Hans F. K. Haerem, Story City, and Willis E. Keith, Lost Nation, have started for Europe.

## MARYLAND

**Personal.**—Dr. J. McPherson Scott, mayor of Hagerstown, while cranking his automobile recently, sustained a fracture of one of the bones of the right forearm.——Dr. F. Webb Griffith, Upper Marlboro, has been appointed visiting physician to the Maryland Agricultural College, vice Dr. Harris Nalley, Mount Rainier.——Dr. Frederick V. Beitler, Halethorpe, has been elected professor of pathology and bacteriology in the Baltimore Medical College.

**State Hospital Overcrowded.**—Dr. Jospeh C. Clark, superintendent of the Springfield State Hospital for the Insane, reports that there are more than 1,000 patients at present in the institution, which is greatly overcrowded. A three-story brick building is to be erected at once to accommodate 150 patients, and a powerhouse is also to be built at an expense of $75,000.

### Baltimore

**Personal.**—Dr. J. Page Strong, who has been seriously ill with typhoid fever, is convalescent.——Dr. John M. T. Finney has given an infirmary to the Country School for Boys. One ward of the infirmary is to be used for the isolation of patients with communicable diseases.——Dr. G. Milton Linthicum is convalescing from typhoid fever at Maryland General Hospital.

**Cause of Typhoid in Militia Camp.**—Dr. Alexius W. McGlannan, chief surgeon of the First Brigade, Maryland National Guard, announces that the outbreak of typhoid fever in the Maryland troops last summer was due to an infected spring near the camp. Ten members of Troop A suffered from the disease and one death occurred. Several of the Corps of engineers, United States Army, suffered in a similar way.

## MASSACHUSETTS

**Warren Prize Awarded.**—The Warren triennial prize for 1910, of the Massachusetts General Hospital, Boston, has been awarded to Dr. George H. Whipple, assistant professor of pathology in Johns Hopkins University and resident pathologist in Johns Hopkins Hospital, for an essay on "The Pathogenesis of Icterus."

## MISSOURI

**Medical School Opens.**—University Medical College, Kansas City, opened for the school year, September 6. Dr. John Punton made a brief address of welcome.

**Personal.**—Drs. Scott P. Child, Jesse E. Hunt, Otho L. McKillip, Archie N. Johnson, Eugene P. Hamilton, Frank C. Neff, Fred B. Kyger, W. H. Bailey, F. LaMar, and William J. Thompkins have been appointed medical inspectors of the public schools of Kansas City.——Dr. Martin T. Balsley has been made medical examiner of the public schools of Joplin.——Dr. Charles B. Hardin, Kansas City, who has been traveling on account of his health for the last six months, has improved and resumed practice.

### St. Louis

**Personal.**—Dr. William A. H. Steinman, an intern at the City Infirmary, vice Dr. Halbert R. Hill, resigned, is said to be the first resident physician to obtain a salary. On September 15, he was granted a salary of $50 a month.

**Faculty Additions.**—The following additions to the faculty of the Washington University Medical Department are announced: Dr. George M. Smith, formerly of New York, instructor in pathology; Dr. W. McKim Marriott, instructor in pathologic chemistry; Dr. Walter E. Garrey, associate in physiology; Robert A. Gessell, instructor in physiology, and Dr. Dennis E. Jackson, associate in pharmacology.

**New Dispensary Established.**—St. Louis University has established a free clinic adjoining Alexian Brothers Hospital in South St. Louis. Dr. William W. Graves has charge of nervous diseases; Drs. Harvey S. McKay and Carroll Smith are in charge of the department of diseases of women and surgery; Dr. Clarence Loeb is ophthalmologist; Dr. William M. C. Bryan, otologist, rhinologist, and laryngologist; Dr. Charles H. Neilson is in charge of the department of internal medicine, and skin diseases will be treated by Dr. John W. Marchildon.

## NEW YORK

**Local Health Officers Must File an Oath of Office.**—Attorney General O'Malley holds that a local health officer must file an oath of office after his appointment to the local health board within a reasonable time, otherwise the office is considered vacant and the local board of health may appoint another man to the office and the latter appointment is legal.

**War on Infantile Paralysis.**—Dr. Eugene H. Porter, State Health Commissioner, has issued a statement that there seems to be no reasonable doubt that poliomyelitis is communicable and that even though the cause may not be positively determined, its transmissibility seems to be positively determined, and, that as a result of a consideration of the subject, the State Department of Health has decided to put the disease on the list of contagious diseases to be reported to the Board of Health and to be quarantined for twenty-one days. It is believed that this plan will result in the report of a much larger number of cases than hitherto, and will be the means of furnishing much valuable information.

**Field Day at Rochester.**—The net receipts of the annual field day of the Rochester Public Health Association, held August 6, were $5,200. While the greater part of the receipts are to be for the benefit of the Children's Free Dispensary, a portion will be used for the running expenses of the dispensary on South Washington Street, and a fixed sum of the balance will be set aside for a basis of the proposed children's hospital. Dr. Montgomery E. Leary, who is actively interested in the plan for this hospital, states that it will be an enlargement of the Children's Free Dispensary in hospital form, and that it will cost about $30,000.

### New York City

**Appeal to Nathan Straus.**—A letter drawn up by a number of social and philanthropic individuals has been sent to Nathan Straus urging him to reconsider his decision to close the milk stations that he has been maintaining in this city. The letter indicates the desire on the part of individuals and philanthropic agencies to cooperate with him in keeping the depots open.

**Mortgage on Academy of Medicine.**—The property of the New York Academy of Medicine at 17-21 W. Forty-third Street, has been mortgaged to the Farmers' Loan and Trust Company for $220,000 for a period of three years. The academy recently acquired the adjoining property and the abutting house on Forty-fourth Street in order to enlarge its building.

**Object to Tuberculosis Clinic.**—The plans of the Board of Health to open a clinic for the treatment of tuberculosis patients on Willoughby Avenue near Stuyvesant Avenue, Brooklyn, has met with strenuous opposition on the part of the Church of St. John the Baptist, which maintains a parochial school and orphan asylum immediately opposite the proposed clinic. A petition signed by all the residents within a radius of two blocks will also be presented in opposition to the plan.

**Increased Appropriation Asked.**—President Lederle of the Board of Health, has submitted to the Board of Estimates his estimate of the appropriations needed for his department during the coming year. He asks for $4,076,578, or $1,328,885 in excess of this year's budget. The principal increases are as follows: Division of chief clerk, $48,949.50; division of child hygiene, $320,545; division of contagious diseases, $113,150; division of general sanitary inspection, $57,210; division of milk inspection, city and country, $60,510; research and vaccine laboratories, $101,759, and division of hospitals, $486,056.

## OHIO

**College Opens for Year.**—The Eclectic Medical College, Cincinnati, opened for its sixty-sixth annual session, September 19, in its new building on West Sixth Street adjoining the Seton, formerly the Presbyterian Hospital.

**Injured in Collision.**—Dr. Morris D. Stepp, Cleveland, fractured three ribs and sustained internal injuries in a collision between his automobile and an electric car near Cleveland, September 25. Mrs. Stepp and her two small children were killed in the accident.

**Dairymen's License Revoked.**—By reason of the report of the dairy inspectors of Dayton to the effect that the dairies of S. C. Burrall and Phillip Erbaugh are in bad sanitary condition, and that neither dairyman has made any effort to place his establishment in a sanitary condition, the licenses of these men to sell milk and cream in Dayton are said to have been revoked.

## PENNSYLVANIA

### Philadelphia

**Woman's College Opens.**—The Woman's Medical College of Pennsylvania opened on September 21, for its sixty-second term. Dr. Clara Marshall, dean of the college, delivered the opening address.

**Personal.**—Dr. James M. Anders returned from Europe September 20.——Dr. Frank Woodbury sailed for Europe September 21.——Dr. G. Carl Huber, Ann Arbor, Mich., has been appointed professor of embryology at the Wistar Institute.——Dr. Edward B. Meigs, formerly connected with the University of Pennsylvania, but in late years associate of physiology at Harvard, has been added to the staff of the institute.

**Floating Hospital for Babies.**—Dr. Joseph S. Neff, in making his report on the work accomplished during the summer in the campaign against infant mortality, has asked for the purchase or rental of a large boat steamer or barge that can be utilized next summer for a floating hospital. The work at the recreation piers has extended so much that the Department has felt the necessity of keeping the baby hospital on the Chestnut Street Pier open day and night, and the exact time of closing them has not been decided.

**Advance of the Pure Food Crusade.**—Following up the investigation of the manufacture and sale of impure ice cream, Special Agent Harry P. Cassidy, of the state dairy and food department has turned his attention to the cheaper qualities of candies retailed by small stores in the city and sold almost exclusively to children. Samples were obtained and sent to Professor LaWall. When analyzed many of these were found to be flavored with ethers, colored with coal tar and coated with shellac. Warrants were issued for the arrest of seven dealers.

## WEST VIRGINIA

**State Physicians to Meet.**—The annual meeting of the West Virginia State Medical Association will be held in Parkersburg October 5 to 7.

**Personal.**—Dr. Carl W. Ulfert, Wheeling, has been appointed physician of Ohio County, vice Dr. John J. Allen.——Dr. Harriet B. Jones, Wheeling, has returned from Europe.——Drs. William R. Whitman, Bramwell, and Wade H. St. Clair, Bluefield, have gone to Rochester, Minn., for clinical studies.

## WISCONSIN

**Personal.**—Dr. Frank E. Darling has resigned as registrar of vital statistics in the health department of Milwaukee.——Dr. Edward B. Bradford, Hudson, has sold the Hudson Sanitarium to Wallace Campbell, Minneapolis.

**Refuse to Accept Rucker's Resignation.**—The Milwaukee City Council, after investigation of the charges preferred against Dr. William Colby Rucker, health commissioner, have refused to accept his resignation, have importuned him to remain in his present position, and have requested Surgeon General Wyman, P. H. and M.-H. Service, to consent to Dr. Rucker's return to Milwaukee.

## GENERAL NEWS

**Fraternity Meeting.**—The twelfth annual general assembly of the Phi Beta Pi Medical Fraternity will be held in Philadelphia, October 4 to 7. Headquarters will be established in the Continental Hotel, at Ninth and Chestnut Streets, and Mr. William Coffin, Jr., of Jefferson Medical College, is chairman of the committee on arrangements.

**Personal.**—Dr. Leon T. LeWald, medical corps U. S. Army, has resigned and has been appointed director of the Edward N. Gibbs *x*-ray laboratory at the New York University and Bellevue Hospital Medical School, New York City, succeeding Dr. E. W. Caldwell. Prior to his service in the Army Dr. LeWald was instructor in gross pathology in New York University and a medical officer of the national guard of New York.——Dr. Charles Wardell Stiles, United States Public Health and Marine-Hospital Service, returned from Europe September 14. Dr. Stiles attended the International Zoologic Congress at Gra, Austria, August 15-20, in connection with the International Commission of Zoologic Nomenclature.——Dr. Charles C. Walker, medical missionary and physician to the American legation at Bangkok, Siam, has returned to the United States for a visit after six years' absence.——Dr. K. F. Meyer, Leipzig, arrived in New York, September 17, from Africa, where he has been pursuing studies of tropical diseases, chiefly those of cattle. He intends to continue his researches in Texas.

## FOREIGN NEWS

**Cholera in Europe.**—According to cable dispatches, September 26, several cases of cholera have been reported at Rome, 28 in Hungary with 11 deaths between September 24 and 26, and there is quite an epidemic at Naples, 100 new cases and 50 deaths being recorded during the day of the 25th. The last official reports by mail from Russia state that 154,445 cases of cholera have been reported in that country since the beginning of the epidemic last April up to August 14, with 74,723 deaths. A strolling band of gypsies from Russia started an epidemic in Apulia, the southeastern province of Italy, over a month ago, although none of the party had cholera—a typical illustration of the dangers of healthy germ carriers. The Berlin Letter below mentions the few cases that have occurred in Germany. A few other isolated cases have occurred since in Germany, one each at Dresden, Stade and Marienburg, and 3 germ carriers have been discovered among the Vistula River rafters. In the second week in August, 24,000 new cases were reported in Russia, with 11,000 deaths.

**The "606 Fever."**—Dr. A. Pulido Martin, in an article in the *Siglo Medico*, of Madrid, Sept. 10, makes some caustic and seemingly injudicious comments on the 'Ehrlich-Hata preparation for syphilis. He says that he is amazed at the extraordinary advertising that a patented remedy is now receiving—the exclusive property of a single manufacturing firm—and warns physicians not to catch this "606 fever," and to go slow in forming their judgments, as there is commercial money-making involved. "The daily papers," he says, "at Hamburg, Cologne, Vienna and especially at Frankfort, the latter inspired directly by Ehrlich, are publishing columns on the subject but without much scientific value. They add another cipher when they mention the number of cases in which the new drug has been applied; they relate how a Hungarian physician hurried to Frankfort and obtained the details of the manufacture of the drug from Ehrlich and then returned to Budapest and announced the organization of a society to produce the new drug; this was then followed by reports of Ehrlich's indignation at this news and his assertion that the drug is the property of a certain firm of manufacturing chemists and that the Hungarian physician could not possibly have learned the full details of its preparation as he, Ehrlich, related them only in a general way, and, besides this, he has modified the substance since, making it less toxic so that it can be injected in larger doses, the new substance being called by a new name, Hyperideal; this statement is followed by the declaration that the 'Hyi' is not to be put on the market, and is not distinct from the original '606' (to avoid spoiling the sale of the latter), but is destined solely for use in his own service, etc., etc." "From the many reports that have appeared on the subject it is evident that the '606' or 'Hyperideal,' or whatever other name it may bear by the time these words are published, does not keep well, the injection is painful, and the fever and other signs of a reaction compel vigilant oversight for a few days. Other authors have reported that the injection of '606' was followed by the death of a patient, but the daily papers, commenting on these fatalities, speak of the authors reporting them as enemies of German science and state that these experiences are negligible as the patients were on the point of dying anyway." He adds in conclusion, "It must not be forgotten that other arsenical remedies, used even for syphilis, which at first were regarded as harmless, later proved to have a decidedly toxic action on remote organs, such as atrophy of the optic nerve under atoxyl treatment. Neither must it be forgotten that, while it has not yet been proved beyond question that a therapeutic problem has at last been solved, there cannot be the slightest doubt in respect to the business end of the '606' matter." Bearing all these things in mind, he urges his readers to restrain their first impulse of enthusiasm as not fully justified up to the present.

## CANADA

**Dislocation or Fracture.**—Judge Lamont of Prince Albert, Sask., is said to have handed down a decision in the case of George Dangerfield, who sued Dr. Alfred David for $10,000 for alleged incorrect diagnosis of an injury, awarding damages of $1,664.25 and costs to the plaintiff.

**Presentation.**—Dr. Alexander H. Beaton, Orillia, who has just retired after thirty-three years' service as superintendent of the Provincial Asylum for Idiots, was presented, on September 12, with a handsome oak cabinet of silver. The presentation was made on behalf of the citizens by Dr. William C. Gilchrist, and the address was read by Dr. Ainsley P. Ardagh.

**New Medical Journal.**—It is announced in the *Montreal Star* that Morang & Company, Limited, Toronto, have made arrangements with the executive committee of the Canadian Medical Association for the publication of the journal of the association, which will be published as a monthly magazine with Dr. Andrew McPhail, Montreal, as editor, and at the appearance of this journal the *Montreal Medical Journal* will be discontinued.

**Hospital News.**—The Victoria Hospital in Fredericton, N. B., is to be materially enlarged.——Edmonton will increase its hospital accommodation at an expense of $175,000.——Winnipeg is erecting a tuberculosis hospital for advanced cases.——A sanatorium for tuberculosis has been opened at Ninette, Man.——A hospital for incurables is to be erected in Vancouver.——Victoria, B. C., is to have a new isolataion hospital. ——Waterloo and Wellington counties, Ontario, are to have a sanatorium for consumptives.

**Medical Society Meetings.**—The Maritime Medical Association, at its annual meeting in St. John, N. B., elected the following officers: President, Dr. Everind A. Kirkpatrick, Halifax; vice-president for Nova Scotia, Dr. George E. Dewitt, Wolfville; for New Brunswick, Dr. George G. Melvin, St. John; for Prince Edward Island, Dr. Henry E. McEwen, O'Leary; secretary, Dr. David T. C. Watson, Halifax, and treasurer, Dr. George G. Corbet, St. John, N. B.——The British Columbia Medical Association, at its annual meeting, held in Tranquille, elected the following officers: President, Dr. Octavius Weld, Vancouver; vice-president, Dr. Charles E. Doherty, New Westminster; secretary, Dr. Alexander S. Monro, Vancouver, and treasurer, Dr. James D. Helmcken, Victoria.

**Personal.**—Dr. Helen MacMurchy has been appointed medical inspector of girls and Dr. Wilmot A. Graham inspector of boys in the public schools of Toronto.——Dr. Joseph W. Lane, Mallorytown, has been elected president of the Ontario Medical Council.——Dr. John William Scott McCullough, Alliston, has been appointed secretary of the provincial board of health of Ontario, vice Dr. Charles A. Hodgetts, Toronto, resigned to accept the position of medical advisor with the Dominion commission of conservation.——Drs. James M. MacCallum and Samuel Cummings, Toronto, have gone to Europe to spend some months in graduate work.——Dr. E. A. McCullough, who was recently appointed superintendent of the London (Ont.) Sanatorium for Consumptives, has resigned and returned to Toronto.——Sir James A. Grant, M.D., Ottawa, who has been sojourning in Scotland the past summer, has been presented with the freedom of the City of Inverness.——Dr. Andrew W. H. Lindsay of Dalhousie University, Halifax, and registrar of provincial medical licenses for Nova Scotia, has been appointed honorary academic council of the student's representative council of Edinburgh University.——Dr. Charles Sheard, Toronto, has again resigned the office of medical health officer. It is understood that the resignation is due to adverse criticism on the part of newspapers in regard to the quality of Toronto's water and the administration of the Toronto Isolation Hospital, the latter of which is now being judicially investigated.——Dr. Alexander S. Monroe, Vancouver, B. C., has been elected secretary of the British Columbia Medical Society.——Dr. Henry E. Tremayne, Prince Rupert, B. C., has been appointed quarantine and dominion medical health officer at that port.——Dr. William A. Lincoln has been appointed superintendent of the Calgary, Alta., General Hospital.——Dr. John A. Gunn has resigned the superintendency of the Winnipeg General Hospital.——Dr. N. J. James, formerly resident physician at the Muskoka Cottage Sanitarium, has been appointed superintendent of the South Dakota State Sanitarium, Custer, S. Dak.——Drs. Herbert J. Hamilton, Charles J. C. O. Hastings and Augusta Stowe Gullen, Toronto, and William Burt, Paris, Ont., have been elected medical representatives on the senate of Toronto University.

## MANILA LETTER

*(From Our Regular Correspondent)*

MANILA, Aug. 16, 1910.

### San José Medical College Closed

The San José College of Medicine and Pharmacy of Santo Tomas University has permanently closed its doors. This leaves the Philippine Medical School the only medical school in the Philippine Islands and the only school to which the Filipinos outside of Manila may look to train medical men for them. Some three months ago by order of the pope, the San José College of Medicine and Pharmacy was turned over to the Jesuit order at the protest of most of the students. It soon became evident that it was the intention to close the institution. The students through a lawyer began proceedings for an injunction against the pope and the papal delegate to the Philippines, Father Algue, to restrain the transfer and closure of the college. Some little mystery seemed to underlie the entire proceedings and considerable dissatisfaction and indignation was felt by most of the students. Now in answer to the medical students Vice-Rector Llanos of Santo Tomas University states that lack of funds render it impossible for the university to maintain a college of medicine and pharmacy. He asserts that "already the College of Medicine and Pharmacy owes the university 143,000 pesos ($71,500) and it owes another society 113,000 pesos ($56,500) owing to deficits during past years when it was enjoying the income from its estates (*i.e.*, part of the friar lands bought by the government). Now that the property has passed out of our hands, it is impossible for us to pay from the little money at our disposal, the deficit between the earnings and expenses of the institution." This leaves many of the students in a rather lamentable position. They have spent several years at the institution and have been expecting to get their degrees within the next year or two. Now that the college is closed there is no place for them to go to finish their medical course. The majority of them speak very little or no English and their training in the Spanish schools, where they got very little science, and in the medical college makes it practically impossible for them to complete their course in the Philippine Medical School without beginning almost at the bottom again. A delegation of the students has asked that they be admitted to the Philippine Medical School, but so far arrangements of this kind have not been granted. At present, therefore, for a population of 8,000,000, the supply of physicians comes from one school, which for each of the next few years will graduate a class of about 15.

### Cattle and Meat Inspection in the Philippines

As was indicated in a previous communication, there has been established a thorough system of inspection of cattle and meat shipped into Manila. There seems to be some promise of freeing the Philippines from communicable infectious diseases of live stock, and it is desired not only to protect the consumer but also to prevent the introduction of other diseases, that this rigid inspection has been established. The quarantine regulations require that cattle coming from an infected port and those exposed to infection while in transit are to be kept in quarantine for a period of 60 days before being allowed to land. This has proved so expensive that it is not altogether practicable. To obviate this latter difficulty, a Manila business man, Senor Faustino Lichauso, has proposed to erect a floating matadero (abattoir) out in the bay. According to this ingenious plan, which has been approved by the Bureau of Health and the Municipal Board, animals after a thorough inspection are to be unloaded directly from the ship to be slaughtered on the matadero and again inspected. The matadero is also to be equipped with a burning plant for the purpose of destroying diseased parts, offal and such other material as is not used. The prevalence of pleuropneumonia in so many of the Australian cattle coming to this port is to a great extent responsible for these measures.

## LONDON LETTER

*(From Our Regular Correspondent)*

LONDON, Sept. 17, 1910.

### Decline of Lunacy in Scotland

In a previous letter (THE JOURNAL, Aug. 27, 1910, p. 788) it was stated that there was a tendency for the increase of lunacy, which has been constantly recorded in England in recent years, to cease. The figures for Scotland, which have just been published, are still more satisfactory. In 1903, for the first time in 19 years, a fall in the number of pauper lunatics in establishments in Scotland was reported. The

report for 1909-10 states that there is reason to believe that the year 1903 marked a turning point and that no permanent increase in the amount of registered insanity is likely to occur beyond that due to increase of population. The following are the proportion of admissions to asylums per 100,000 of the population in the last 5 quinquennial periods: 1886-1890, 73.4; 1891-95, 79.4; 1896-1900, 82.4; 1901-05, 84.4; 1906-10, 77.3.

### The Crusade Against Tuberculosis

In spite of the work which has been done for the prevention and cure of tuberculosis there are at present in the United Kingdom between 350,000 and 400,000 persons suffering from tuberculosis, and each year 60,000 die from pulmonary tuberculosis and 30,000 from other forms of this disease. With these figures before it, the National Association for the Prevention of Tuberculosis has decided to make further efforts to educate the people in the prevention and treatment of the disease, which is still responsible for the deaths of 1 person out of every 10. The committee of the association points out that, as the working classes are losing $15,000,000 a year in wages owing to sickness due to consumption, it is time that steps were taken to disseminate a knowledge of its infectious nature and the method by which its spread may be limited. The committee finds that the quickest and ultimately the cheapest way to educate the nation is by means of (1) traveling tuberculosis exhibitions; (2) caravans with lantern-slides; (3) popular lectures; (4) an information bureau for the press and public; and (5) the distribution of literature. It is estimated that to conduct a campaign efficiently on these lines would cost $25,000 a year. The committee has also made arrangements for a "campaign by poster," which is being assisted by the billposters' association. One large firm has undertaken to produce 30,000 bills measuring 10 feet by 7 feet 6 inches, printed in eight colors.

### The Hygiene of Childhood

State interference in hygiene of childhood has considerably increased in recent years. Presiding at the conferences of the congress of the Royal Sanitary Institute, Sir William Collins, M.P., delivered an important address on the hygiene of childhood. He said in part: Child life is a most sensitive reagent to hygienic and mal-hygienic influence. Early sanitary reformers, like Dr. Farr, have taught us to keep our eyes on the death-rate, but until recently we have complacently regarded the improvements in the general health-rate while ignoring the fact that until within the last few years the infant death-rate has shown little disposition to decline. Happily, attention is now concentrated on child life and the influences which act on it for weal or woe. Voluntary agencies, administrative bodies and the legislature are all alive to the importance of such questions. The years of school life—from 5 to 14—are tending to become not merely educational, but a period of state handling of childhood. There should be hospitals for the treatment of measles and whooping-cough, diseases which lay a heavy toll on child life. Physical education in schools should not be of the nature of military drill, for such is not the best form of exercise; it gives a bias or premature specialization to the child. More attention should be paid to moral education; otherwise the tendency is to make a good animal rather than a good citizen. We should foster self-knowledge, self-reverence and self-control and not a military spirit or a morbid form of spurious patriotism. The state is doing more and more for the individual, but that is no reason why the individual should do less for himself, but, rather, why he should be encouraged and spurred on to do more and to exercise the spirit of self-reliance and independence which they are trying to teach in the schools.

### Hygiene of Ships

Another important paper read at the congress was on "The Necessity of a Revision of the Standard of Hygiene of Crews' Spaces in New Vessels," by Dr. Howard Jones, health officer of Newport. He said that it was most unfortunate that the accommodation provided in new vessels constructed in Great Britain was in a considerable proportion of cases very unsatisfactory from a hygienic standpoint. In the designing of new vessels the most elementary rules of sanitation were constantly ignored. In many instances the standard was much lower on new vessels than on old. The conditions were so bad that it was not surprising that the types of men in the merchant service were degenerating. It was humiliating that small countries like Norway and Denmark demanded a higher standard of hygiene in reference to crew spaces than did Great Britain.

## PARIS LETTER

*(From Our Regular Correspondent)*

PARIS, Sept. 16, 1910.

### Tuberculosis in Rural Districts in France

At the last meeting of the Association Française pour l'avancement des Sciences, Dr. Maurel, professor in the Toulouse college of medicine, reported the results of the investigation, embracing 2,500 communes, that he had undertaken in regard to tuberculosis morbidity among the rural population. Figures furnished by physicians practicing in these communes (Dr. Maurel selected communes where only one physician practiced) show that the number of subjects of tuberculosis in the country is, on an average, 2.93 per one thousand inhabitants. The departments most affected are those of Mayenne (15 per cent.), Loire (5.9 per cent.), Drôme (5.7 per cert.), Hautes-Alpes (8 per cent.), Côtes-du-Nord (4.3 per cent.), Seine-Inférieure (4.14 per cent.), Vienne (4.6 per cent.), Creuse (4.7 per cent.), Auvergne (4 per cent.), Haute-Savoie (4 per cent.); those less affected are Basses-Alpes (1 per cent.), Hautes-Pyrénées and Landes. In general, the departments of the south are less affected; those of the north are more so. Altitude and the vicinity of the sea seem to play no part. In general, tuberculosis is increasing appreciably almost everywhere. The causes are immigration toward cities, military service and primary schools, through which the contagion is disseminated, bovine tuberculosis, alcoholism, the deplorable domestic sanitation in the country, where dwellings are small and without light and air, and the lack of prophylaxis and disinfection.

Dr. Lafforgue, a military physician, expressed doubts in regard to the dissemination of infection in the country by dismissed tuberculous soldiers. He believes that, while soldiers sometimes contract tuberculosis in the barracks, they often have brought it to the regiment, where it is developed, as Dr. Kelsch has shown, with the first fatigues. Dr. Lafforgue says that excuses from service are at present very liberally granted by the military physicians, who are disposed to grant them even in doubtful cases.

### Suit Against Surgeon for Sudden Death During Anesthesia

Dr. Forgue, professor of clinical surgery at the Montpellier college of medicine, was recently prosecuted for professional negligence, the sum of $20,000 (100,000 francs) damages being asked for the death of the plaintiff's son on the operating-table during chloroform anesthesia. The Montpellier court decided against the plaintiff, on the ground that the syncope to which the patient succumbed was one of those accidents against which science at present has no remedy, and that Dr. Forgue had taken all the precautions usual in such cases. Dr. Forgue then brought a cross-action, on the ground of the injury to his reputation through the prosecution. Taking into account the fact that this prosecution was the outcome of the excitement occasioned by a painful event, he limited his demands to the sum of 20 cents (1 franc). The court sustained this demand and sentenced the father of the deceased to pay Dr. Forgue 1 franc damages.

### The Hennequin Prize

Dr. Jules Hennequin, who is well known for his ingenious apparatus for the treatment of fractures, and whose death I mentioned some months ago (THE JOURNAL, April 23, 1910, p. 1387), by his will founded a biennial prize of $300 (1,500 francs), which he has requested the Société de chirurgie of Paris to award to the author of the best memoir on the anatomy, physiology, pathology and traumatisms of the human skeleton.

### Suppression of Nursing-Bottles With Tubes

About a year ago (THE JOURNAL, July 3, 1909, p. 40) I mentioned a bill bearing on the sale of nursing-bottles with tubes. This bill finally resulted in the law of April 9, 1910, which forbids the sale, exhibition and importation of such nursing-bottles, and the courts have already sentenced twelve retail grocers of the neighborhood of Alençon, Normandy, for infraction of the law.

## BERLIN LETTER

*(From Our Regular Correspondent)*

BERLIN, Sept. 8, 1910.

### Personal

The associate professor of pharmacology at Göttingen, Dr. W. Heubner, has been made a regular professor. He is 31 years old, the son of the Berlin pediatrist.——At Marburg the associate professor for pharmacology, Dr. Gürber, has been

raised to a regular professorship, and the associate professor of otology, Dr. Ostmann, has received the title of regular honorary professor.——Prof. L. Brauer, the director of the medical clinic at Marburg, has been chosen to be director of the public hospital at Hamburg-Eppendorf, as successor to the late Professor Lenhartz.

### Cholera

The second victim of cholera in the neighboring town of Spandau, mentioned in my last letter, died two days ago. No other cases have developed. Berlin is still free from the disease. In Russia cholera continues its ravages unchecked. In the week from July 31 to August 6, according to the recently published official figures, 21,000 cases were reported, and 9,000 of the victims died. An Austrian scientist has suggested in the *Wiener klinische Wochenschrift* that the other European governments will have to bring pressure to bear on Russia to compel the Russian government to take more effectual measures for the prevention of cholera, as it is a perpetual menace, year after year, for the rest of Europe. The Austrian writer is evidently unaware of the difficulties and hopelessness of any diplomatic measures of the kind. It would be impossible to compel the Russian government to undertake any measures on its own soil unless war was declared against it. Besides, there is no doubt that the Russian government is anxious to exterminate cholera within its borders, and the realization of this desire fails solely on account of the inadequate sanitary organization and sanitary official force, the stupidity of the populace and the inadequate financial means.

### Russian Discrimination Against Jewish Visitors

As is well known, Jewish physicians who wish to visit Russia find many difficulties thrown in their way, and it has repeatedly happened that German Jewish physicians, summoned in consultation for Russian patients, have not been able to answer the summons, or only with considerable delay, on account of the hindrances placed in their way by the passport authorities. Nonsensical as these regulations are, it has not been possible hitherto to bring the Russian authorities to a more rational point of view. On the occasion of the Moscow International Medical Congress, Virchow was able to obtain from the Russian government the assurance that no difficulties would be placed in the way of attendance at the congress of German Jewish physicians, only by making this the indispensable condition for his acceptance of the chairmanship of the German national committee. It has required repeated efforts also this year to smooth away the difficulties for German Jewish gynecologists to attend the international gynecologic congress, to be held at St. Petersburg in October. In the same way the members of the Naturforscher congress at Königsberg, this fall, have experienced no little difficulty in obtaining passports for the contemplated excursion over the Russian border. Both these meetings, however, will undoubtedly suffer from the fear of the cholera epidemic.

### Eddyism in Berlin

Notwithstanding all the exposures which have repeatedly appeared in the daily papers and the statements of physicians to individuals, it has proved impossible to stamp out Eddyism in Berlin. On the contrary, it has obtained quite a number of adherents, some with considerable means, and it is known that especially the members of the so-called better social circles are joining this cult. A few days ago a circular was widely distributed by the society containing exact instructions how to get well without medical aid by prayer, alone or supplemented by the laying-on of hands by the Eddyite "elder."

### Medical Inspection of Chauffeurs

It has recently been ordered that the applicant for a chauffeur's license must present the certificate of a physician (*beamteten Arztes*) to the effect that the candidate has no physical defects which would interfere with his management of an automobile, especially defects in hearing and vision.

## VIENNA LETTER

(*From Our Regular Correspondent*)

VIENNA, Sept. 10, 1910.

### Personal

After a prolonged vacancy the chair of ophthalmology has been again filled, and Professor Dimmer has consented to be the successor of Professor Schnabel. The new director of the first eye clinic in Vienna is a pupil of Arlt, Jäger and Fuchs. In 1895 he was appointed professor of ophthalmology at Innsbruck; then he was called to Graz. He has published, besides several minor papers, the more important books: "Ophthalmologic Diagnoses," "The Light-Reflexes of the Retina," "Anatomy and Physiology of the Macula Lutea." His contributions to medical literature have always elicited much interest.——Prof. Julius Tandler has been appointed professor of anatomy, and thus is the successor of the late Zuckerkandl. His appointment will be received by the students with the utmost satisfaction, for he is very popular with them on account of his excellent pedagogic qualities. In fact, he is perhaps the best teacher, in the strict sense of the word, here in the university. His classes and courses are famous and are always thronged, and, being the first assistant of the bedridden scientist, Zuckerkandl, he had substituted him for several years. He has been very much engaged in embryologic and ontogenetic work, and one of his favorite lecture-series was that dealing with topographic anatomy. He had been recommended by the senate of the university "primo et unico loco," a rare mark of distinction.

### First Cases of Cholera in Vienna

While the first 2 cases of cholera in this city could be traced to the place of infection, and thus all precautions for thorough prophylaxis were possible, 3 new cases happened about a fortnight later in an outlying suburb of the city, where the source of infection remains hitherto unknown. Naturally the endeavors of the board of health are directed, apart from the quarantine and isolation required by the outbreak, to the destruction of all unhealthy conditions existing in the capital. The supply of water is excellent, perhaps the best in all Europe. The sewerage system is also very good and absolutely modern, with the exception of a small area recently incorporated into the city. It was here that the 3 new cases occurred, in a father, mother and child. The method of removing the household refuse and waste is, however, very antiquated and insanitary, and what years of public indignation could not bring about, namely, modern provisions in this respect, may be perhaps accomplished quickly by the threatening approach of a ghastly disease.

### State Control of Juvenile and Female Laborers

In a report to the *Wiener klinische Wochenschrift* Dr. Hofmokl deals with the results obtained by the institution of inspectors of factories and home industries as regards the reduction of the work required from females and juvenile workers. The main points aimed at by the state control were the gradual, not sudden, increase of work imposed on young workers, and this has been attained in numerous occupations, and the relief of pregnant women and nursing mothers from the pressure of factory work. Thus in the mining and iron industries, in open shops and in agricultural occupations, persons less than 16 years of age must have no more than 10 hours work a day, with a clear 24 hours of rest each week. Besides this, their work must be at least an hour less than that of their adult work-mates, so that sometimes they have only 8 and 9 hours a day. For women all night-work has been nearly stopped, and in a good number of occupations also the 10-hour limit has been adopted. The conditions of children's work in the factories is regarded as very satisfactory where it is controlled. But in private employment (weaving at home, service as waiters in restaurants, theaters and shows) a law regulating the duration of working hours is urgently required. Here, at present, the inspectors are powerless. The protection of the female laborer during her pregnancy and in childbed has been given over to the *Krankenkasse*, or wage-earners' insurance society, which is now bound by law to pay the female member coming into such a condition its full sick pay for 6 weeks, commencing 2 weeks before the expected confinement. The death-rate of women engaged in any one of the industries is very high; in fact, it is the highest percentage of all the mortality statistics. Therefore, attention has been turned to that point; married women have a right to a noon rest of 2 hours for the purpose of arranging their housework; furthermore, the factories are not allowed to give out work to them to be finished at home. Another clause of the new act dealing with the provisions for sick female workers requires the appointment of a female district doctor wherever the majority (60 per cent.) of the factory hands of a district consists of females, and inspection by that doctor also of all puerperal cases. These are, of course, the main points only, but they suffice to show the trend of the present social legislation in this country and the efficiency of state control of wage-earners.

## Marriages

BOYD A. MUSTER, M.D., to Miss Bessie Crady, both of Lyons, Ky., July 1.

JULIUS BLECHSCHMIDT, M.D., to DOTT CASE, M.D., both of Philadelphia, September 14.

JAMES D. HILLIS, M.D., to Mrs. Edna E. Robinson, both of LaFayette, Ind., August 20.

ORIE C. YODER, M.D., Peru, Ill., to Miss Sadie Albrecht of Tiskilwa, Ill., September 15.

HENRY LONGSTREET TAYLOR, M.D., to Miss Ethelberta Geer, both of St. Paul, September 8.

WALTER BAUMGARTEN, M.D., to Miss Louise Knapp, both of St. Louis, Mo., September 20.

FRANK P. WAS, M.D., to Miss Elizabeth Annie Howorth, both of Chicago, September 21.

AUBREY V. JONES, M.D., Louisville, Ky., to Miss Mable Sells, at Anderson, Ind., recently.

HENRY J. NICHOLS, M.D., U. S. Army, to Miss Grace Gundry of Catonsville, Md., September 21.

FRANK W. COWGILL, M.D., Baxter, Iowa, to Miss Estella Werts of Russell, Iowa, September 7.

PAUL BROWN DUNBAR, M.D., Baltimore, to Miss Alice Lenore Davison, at Norfolk, Va., September 7.

JOSEPH MILTON TRIGG, M.D., to Miss Clara Lillian Roberts, both of Shawnee, Okla., September 4.

HURON WILLIS LAWSON M.D., to Miss Franceska Kasper, both of Washington, D. C., September 14.

WILLIAM GEORGE MCKAY, M.D., Jacksonville, Fla., to Miss Inez Louise Neal of Letts, Iowa, September 14.

GEORGE ROCER ALBERTSON, M.D., Moline, Ill., to Miss Mary K. Klacke of Cedar Rapids, Iowa, at Iowa City, recently.

WALTER HARDING YOUNG, M.D., Freedom, N. H., to Miss Ethel Marie Hardy of Dedham, Mass., September 14.

FREDERICK JOHN JENNINGS WOOD, M.D., to Mrs. Mabel Wheeler Bailey, both of Brooklyn, N. Y., in Boston, July 12.

FREDERICK T. KOYLE, M.R.C., U. S. Army, to Miss Sarah A. Leopold of Savannah, Ga., at Washington, D. C., August 30.

LOWELL MCKEE GREEN, M.D., Rushville, Ind., to Miss Maud Beatrice Fargo of Portland, Ore., at St. Louis, September 15.

## Deaths

**Henley C. Rutter, M.D.** Medical College of Ohio, Cincinnati, 1869; of Columbus; a veteran of the Civil War; a member of the American Medical Association; for four years superintendent of the Dayton State Hospital, and later superintendent of the state hospitals at Athens and Columbus; founder and for several years superintendent of the Ohio Hospital for Epileptics, Gallipolis; up to last year in charge of the Park View Sanitarium, Columbus; an alienist and writer on sociologic problems and diseases of the nerves and mind, died September 17, in an ambulance, while on the way to Lakeside Hospital, Cleveland, from the effects of poison, believed to have been self-administered with suicidal intent while mentally irresponsible, aged 61.

**Gustav Baumgarten, M.D.** Washington University, St. Louis, 1856; a member of the American Medical Association; passed assistant surgeon in the Navy throughout the Civil War; in 1899, president of the Association of American Physicians; from 1867 to 1871, editor of the *St. Louis Medical and Surgical Journal*, and professor of histology and pathology in the College of Physicians and Surgeons from 1873 to 1892 professor of physiology and therapeutics in the same institution, and since that time professor of practice of medicine in Washington University Medical School; died at his home in St. Louis, September 19, aged 73.

**Lucius French, M.D.** Berkshire Medical College, Pittsfield, Mass., 1853; a member of the American Medical Association, and International Association of Railway Surgeons; in 1908, made a life-member of the Scott County Medical Society; local surgeon at Davenport for the Chicago, Milwaukee and St. Paul Railway; assistant surgeon of the Thirty-first Iowa Volunteer Infantry during the Civil War; president of the local board of U. S. Pension Examining Surgeons from 1864 to 1884; died at his home, September 19, from angina pectoris, aged 78.

**William Smith Nelson, M.D.** New York University, New York City, 1887; of Utica; a member of the American Medical Association; a member of the staff of the Faxton Hospital; an authority on pulmonary tuberculosis, and examiner for the State Tuberculosis Hospital, Raybrook, N. Y., died September 12, in Butler Hospital, Providence, R. I., aged 47.

**Charles Cook Ransom, M.D.** University of Buffalo, N. Y., 1883; of New York City; a member of the American Medical Association; a member of the visiting staff of the City Island, Blackwell's Island, and president of its medical board; died in the Faxton Hospital, Utica, N. Y., September 13, after an operation for intestinal obstruction, aged 50.

**Ira Ellis DuPree, M.D.** Louisville Medical College, 1874; a member of the Medical Association of Georgia; formerly of Danville but of late years of Athens, Ga.; a surgeon of volunteers during the Spanish-American War; local surgeon for the M. D. and S. Railroad; died at Saranac Lake, N. Y., from chronic pulmonary tuberculosis, aged 56.

**Elisha Warick Miller Low, M.D.** a graduate in medicine but never in practice; who spent most of his life in developing the lime business, and was for seventeen years president of the First National Bank of Bloomsburg, Pa.; died at his home in Lime Ridge, August 21, from organic heart disease, aged 81.

**Milan A. Gates, M.D.** Detroit Medical College, 1880; a member of the American Medical Association, and member of the American Association of Railway Surgeons; local surgeon to the Chesapeake and Ohio Railroad; died at his home in Ronceverte, Va., September 14, from locomotor ataxia, aged 65.

**John S. Lewis, M.D.** Jefferson Medical College, 1868; a member of the Iowa State Medical Society; president of the Humane Society; a veteran of the Civil War; a member of the staff of the Finley Hospital, Dubuque; died at his home in that city, September 14, from pernicious anemia, aged 65.

**F. G. Hall** (license, Texas, 1907); of San Antonio, Texas, for seventeen years a practitioner, and formerly in the government medical service at Ketchikan, and Juneau, Alaska; died in a hospital in San Antonio, September 6, from shock following an operation for pyelonephritis, aged 47.

**Joseph R. Sewell, M.D.** Southern Medical College, Atlanta, Ga., 1888; formerly general director of the Carrollton (Ga.), Sanitarium and School of Electrotherapeutics; was shot and instantly killed in his office in Atlanta, September 20, by a patient believed to have been insane, aged 48.

**George L. McIntire, M.D.** Baltimore Medical College, 1888; of New Martinsville, W. Va.; a member of the American Medical Association, and a veteran of the Civil War; died in the North Wheeling Hospital, Wheeling, W. Va., September 12, from appendicitis, aged 63.

**Timothy D. Sullivan, M.D.** Bellevue Hospital Medical College, 1884; of Calais, Maine; a member of the American Medical Association; an oculist and special United States pension examining surgeon for the eye and ear; died at his home, August 31, from enterocolitis, aged 54.

**Hugh Sloan, M.D.** Albany (N. Y.) Medical College, 1865; of Utica; a member of the Medical Society of the State of New York; in 1873 a member of the local board of health; died at his summer cottage at Lewis Point, Oneida Lake, September 7, aged 66.

**Everard Mead Grant, M.D.** Tulane University, New Orleans, 1872; a member of the American Association of Railway Surgeons, and local surgeon at Terry, Miss., for the Illinois Central Railroad; died at his home, September 3, from nephritis, aged 65.

**Samuel White Fain, M.D.** New York University, New York City, 1892; a member of the American Medical Association; physician to the Jefferson County Asylum for the Poor; died at his home in Dandridge, Tenn., September 17, from anemia, aged 42.

**James Wylie Bowden, M.D.** Bellevue Hospital Medical College, 1869, and for sixteen years thereafter clinical assistant to the late Dr. James R. Wood; died at his home in Yonkers, N. Y., May 3, from cerebral hemorrhage, aged 62.

**James H. Johnson, M.D.** University of Buffalo N. Y., 1866; a veteran of the Civil War, and for many years surgeon of the North Dakota Soldiers' Home, Lisbon; died at his home in that place, September 14, from cerebral hemorrhage, aged 71.

**Richard Kissam Macalester, M.D.** University of Zurich, Switzerland, 1890; house physician for the Glenwood Springs (Colo.) Company from 1898 to 1906; died at his home in Denver, September 16, from pulmonary tuberculosis, aged 51.

**Joseph Aiken Reid, M.D.** Eclectic Medical College of the City of New York, 1908; superintendent of St. Vincent's Hospital, West Brighton, Staten Island, New York; died at the home of his mother in Brooklyn, September 13, aged 23.

**James Frank Gillespie, M.D.** College of Physicians and Surgeons, Baltimore, 1897; for many years a school teacher in Nova Scotia; died at his home in the Bronx, New York City, September 12, from heart disease, aged 41.

**George E. Barth, M.D.** Kentucky School of Medicine, Louisville, 1869; State University of Iowa, Iowa City, 1875; formerly of Rock Island Ill.; died at his home in St. Louis, September 15, from nephritis, aged 62.

**Walter Peck Miller, M.D.** University College of Medicine, Richmond, Va., 1898; a member of the Medical Society of Virginia; died at his home in Newport, September 2, from ulceration of the intestine, aged 34.

**Joseph Boyd, M.D.** Medical College of Ohio, Cincinnati, 1888; a member of the Kentucky State Medical Association; of Cynthiana, Ky.; died September 16, at a hospital in Oxford, Ohio, from nephritis, aged 47.

**Benjamin Whitaker Daniel, M.D.** University of Pennsylvania, Philadelphia, 1858; assistant surgeon in the Confederate service during the Civil War; died at his home in Atlanta, Ga., September 13, aged 78.

**James Henry Clarke, M.D.** College of Physicians and Surgeons, New York City, 1889; died at his home in the Bronx, New York City, September 14, from septicemia following an operation wound, aged 44.

**John Samuel Sellers** (license, Maryland, 1893), a member of the Augusta County (Va.) Medical Society; died at his home in Weyer's Cave, September 2, from chronic interstitial nephritis, aged 41.

**Marcel Pietrzycki, M.D.** Cooper Medical College, San Francisco, 1872; a prominent citizen and formerly mayor of Dayton, Wash.; died suddenly at his home, September 12, from heart disease.

**Eugene M. Bancroft, M.D.** Eclectic Medical Institute, Cincinnati, 1892; of Southington, Ohio; was instantly killed by the overturning of his automobile at Warren, Ohio, September 13, aged 42.

**Duncan Hossack Hutchinson, M.D.** University of Toronto, 1890; a member of the Ontario Medical Association; died at his home in Port Rowan, Ont., June 2, from heart disease, aged 45.

**Ethelbert Norwood Goodson, M.D.** Barnes Medical College, St. Louis, 1899; of Hopkins, Mo.; died in the Woodson Sanitarium, September 5, from paresis, aged 33.

**Vira Abel Brockway, M.D.** Northwestern University Woman's Medical School, Chicago, 1887; died at her home in Chicago, September 21, from cerebral hemorrhage, aged 57.

**Samuel T. Botts, M.D.** Hospital College of Medicine, Louisville, 1891; a member of the American Medical Association; died at his home in Glasgow, Ky., September 20, aged 68.

**Augustus Wierich, M.D.** University of Pennsylvania, Philadelphia, 1866; a member of the Illinois State Medical Society; died at his home in Galena, September 13, aged 66.

**Ezra Walling** (license, twenty years of practice, Mich., 1900); a practitioner in Michigan for fifty-six years; died at his home in Cooperville, September 13, aged 85.

**Jimsey H. Rogers, M.D.** University of Wooster, Cleveland, 1877; a veteran of the Civil War; died at his home in Louisville, Ohio, September 1, from nephritis, aged 64.

**Elizabeth Griselle, M.D.** Woman's Medical College of Pennsylvania, Philadelphia, 1856; died at her home in Salem, Ohio, August 23, from pulmonary tuberculosis, aged 79.

**Henry T. Reinsel, M.D.** College of Physicians and Surgeons, Baltimore, 1886; died at his home in Coraopolis Heights, Pittsburg, September 12, from heart disease, aged 51.

**Americus V. Watkins, M.D.** Eclectic Medical College of Pennsylvania, Philadelphia, 1871; died at his home in Dansville, N. Y., August 30, from paralysis, aged 68.

**Irving Oscar Cummings, M.D.** Harvard Medical School, 1890; a member of the Massachusetts Medical Society; died at his home in Brewster, August 2, from chronic interstitial nephritis, aged 46.

**William Cooper, M.D.** Eclectic Medical Institute, Cincinnati, 1867; died at his home in Kokomo, Ind., September 17 from disease of the stomach aged 71.

**Upton A. Ager, M.D.** Rush Medical College, 1867; died at his home in Peru, Ind., September 7, from cerebral hemorrhage, aged 71.

**Eugene Scott Alexander, M.D.** College of Physicians and Surgeons, Chicago, 1901; of Indianapolis; died in a hospital in Chicago, September 4, aged 38.

**John F. McKinley, M.D.** Eclectic Medical Institute, Cincinnati, 1876; died suddenly at his home in Arcola, Ill., September 14 from heart disease.

**Gregg Garrison, M.D.** University of Halle, Germany, 1878; (years of practice, Ill., 1878); died at his home in Wayne City, April 12, aged 79.

**Orlando W. Cummings, M.D.** Rush Medical College, 1883; died at his home near Buda, Ill., September 6, from cerebral hemorrhage, aged 54.

**William T. Wilson, M.D.** Rush Medical College, 1863; a retired physician of Bunker Hill, Ind.; died at his home September 3, aged 83.

**Katherine Kurt, M.D.** Hahnemann Medical College, Chicago, 1882; died at her home in Akron, Ohio, from pneumonia, aged 57.

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# *Pharmacology*

## REMEDY FOR SORE THROAT

It is not an uncommon occurrence for THE JOURNAL to receive a letter from a layman who belives—or professes to believe—that he has made an epoch-making discovery in therapeutics. The definiteness of the claims made for the therapeutic virtues of these "discoveries" is equaled only by the indefiniteness of the description of the products themselves. So rarely, in fact, is any information of even approximate definiteness sent that a communication received recently by the Council formed a rare exception. This letter was from G. M. Rathbun, of Sedan, Kan.

Mr. Rathbun stated that he had a remedy for "diphtheria, tonsillitis, ulcerated sore throat" and similar conditions. So far the letter differed in no essential respect from others describing the virtues of "cures" proposed by laymen. He went on to say that he wished the medical profession to know of the remedy so that it might be more widely used, and to that end had interviewed Professors Bailey and Havenhill of the State University of Kansas. These men had suggested that he write to the Council on Pharmacy and Chemistry and make known his desire; hence the letter. With the letter were the statements of two physicians of Sedan, Kan., to the effect that the preparation had considerable value as an antiseptic for stomatitis, tonsillitis and similar conditions. Mr. Rathbun was told that if he wished to give physicians the benefit of his remedy he should describe briefly its composition and method of preparation. This he did in the following words:

"This remedy is composed of a strong tea or decoction of sage and garden saffron (about equal parts in bulk), sweetened to make it reasonably palatable, and acetate of copper (verdigris[1]), 5 or 6 grains to the ounce, shaken well together and shaken well before using. The acetate of copper must not have remained long in a pulverized or 'floured' condition before being put into the tea. This remedy should be used with a swab, especially when used far back in the mouth or throat."

That this mixture should possess antiseptic and astringent properties is to be expected, and as such is doubtless of value in mild affections of the throat or oral mucous membrane. It may have some place as a local application in cases of diphtheria, providing always that its use is entirely subsidiary to the antitoxin treatment. Therein, however, lies the danger of advising the use of a topical remedy in cases of "sore throat"—that curative measures are apt to be postponed until serious systemic damage has resulted.

Mr. Rathbun's mixture undoubtedly has the astringent and antiseptic action of the copper salts, perhaps slightly fortified by the very mildly similar action of sage and saffron. More than this, however, surely should not be claimed for it.

1. The term "verdigris" is loosely used. Frequently it refers to cupric acetate; more popularly it is used in reference to the carbonate, while rightly it should mean the basic acetate of copper.

## MAIL-ORDER MEDICAL CONCERNS

### Light Shed on Some of Their Inner Workings by the Rainey-Atkins Tragedy

The sordidness and general disreputableness of the mail-order medical business again has been brought to public attention by the recent Chicago tragedy in which Dr. James M. Rainey shot and killed his one-time partner, Louen V. Atkins. Rainey, a graduate of the Eclectic Medical Institute of Cincinnati, has for many years operated in Chicago, in partnership with Atkins, a quack medicine concern known as the "Dr. Rainey Medicine Company;" at the same time he has been manager of the American Animal Therapy Co.

The former concern sold a "general debility cure" called "Vitaline"—said, by the way, to be put up by one of the large "ethical" pharmaceutical houses—which was advertised in the cheap-grade magazines and sold on the mail-order plan, no local business being sought. The nostrum was sold at $1 a bottle or 6 bottles for $5. It appeared from the testimony given at the inquest that when a "patient" became dissatisfied with the Vitaline "treatment" and threatened to cause trouble for the concern an effort was made to turn him over drew from the "Dr. Rainey Medicine Company" and opened in the same building a rival concern called "Dr. James M. Rainey, incorporated." The similarity of names of the two companies caused much trouble and confusion in the delivery of the mail and recently Atkins had changed the name of his concern to the "American Home Treatment Company."

As is common with mail-order medicine companies, one of their methods of getting the names of prospective victims was to purchase them from "letter brokers." These "brokers" buy and sell the letters of those unfortunates who have been so unwise as to write to quacks or "patent medicine" houses. Not only did Rainey and Atkins buy the names of possible "patients" but they evidently sold the original letters of their past customers. In the list sent out by one of the largest "letter brokers" in the country we find tabulated under "Female Complaint Letters," "7,900 Dr. Rainey Med. Co. 1908 & 1909" letters for sale. It was this very practice of buying letters that led to the tragedy. Atkins had received and cashed a money-order that was intended for Rainey and when the return of the money was demanded Rainey was accused of having taken the name of the person sending it from

FREE Dollar Bottle Vitaline
YOU PAY NOTHING FOR IT
Dr. Rainey says: "My scientific formula of Vitaline is the sure cure for the diseases and symptoms mentioned below—it's the most certain of all and there is no doubt about this. Vitaline tablets are just the treatment so many are looking
MAKES STRENGTH AND HEALTH
WRITE TO-DAY
for, what they should have and must have to be made strong, vigorous and healthy. It makes no difference how weak you are nor how long you have had your trouble, Vitaline tablets will easily overcome it—they will not fail nor disappoint you.
FILL COUPON BELOW
by writing your name and address. Send just 10c in stamps or coin to get the bottle packed and pay postage. This is all you have to do to get a $1 bottle of Vitaline Tablets free. We give you the $1 bottle without cost or obligation to prove what a wonderful remedy Vitaline Tablets are. We know when you have taken them you'll say with a glad heart that you have at last found the right medicine.
Vitaline tablets act on the Vital Organs that generate vitality and create the nerve force which makes one feel strong, vigorous and healthy, equal to all the duties and pleasures of robust strength and health. They give you vigor and vitality every day and restore you so fast and completely you never know there was anything the matter.
Vitaline tablets are guaranteed by us under the U. S. Pure Food and Drugs Law by Guarantee No. 8377. You never had anything like them, combining their wonderful curing and strengthening powers.
We send you our illustrated book, "Vitality." You have never seen one like it. Our testimonials from people cured after ten to forty years of doctoring will convince you of all we claim for Vitaline tablets.
NERVOUS WEAKNESS, DEBILITY—Lost Vitality, Nervousness, Weakness, Twitching, Jerking, Easily Excited, Wormout Feeling, Weak, Aching Back, Lack of Strength, Energy or Ambition, Bad Dreams, Poor Memory, Bashful, Restless at Night, Despondent.
STOMACH TROUBLES—Pain in Stomach, Loss of Appetite, Dyspepsia, Indigestion, Bad Taste or Breath, Sick Headache, Bloated, Heartburn, Sour Belching, Spitting Up, Catarrh, Gas, Gnawing, Nervousness.
HEART WEAKNESS—Fluttering, Skipping, Palpitation, Pain in Heart, Side or Shoulder Blade, Short Breath, Weak, Sinking, Cold or Dizzy Spells, Swelling, Rheumatism, Throbbing in Excitement or Exertion.
CATARRH—Hawking, Spitting, Nose Running Watery or Yellowish Matter or Stopped Up, Sneezing, Dull Headache, Coughing, Deafness; Pains in Kidneys, Bladder, Lungs, Stomach or Bowels may be Catarrh.
BLOOD TROUBLES—General Debility, Paleness, Thin, Weak, Run-Down, Nervous, Rash, Sores, Ulcers, Pimples, Chilly or Feverish, Loss of Flesh and strength.
Exact size of Bottle containing 120 Vitaline tablets.
ENCLOSE 10 CENTS IN STAMPS OR COIN, for Postage, Packing, Etc.
Dr. Rainey Medicine Co., Dept. 8, 152 Lake Street, Chicago. I enclose amount for postage and packing. Send at once by mail in plain package, $1.00 bottle Vitaline Tablets, without cost or obligation to me.
NAME .....
ADDRESS .....

FREE Dollar Bottle Vitaline
YOU PAY NOTHING FOR IT
We have proven our scientific formula of Vitaline is the sure cure for the diseases and symptoms mentioned below—it's the most certain of all and there is no doubt about this. Vitaline tablets are just the treatment so many are looking
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for, what they should have and must have to be made strong, vigorous and healthy. It makes no difference how weak you are nor how long you have had your trouble, Vitaline tablets will easily overcome it—they will not fail nor disappoint you.
FILL COUPON BELOW
by writing your name and address. Send just 10c in stamps or coin to get the bottle packed and pay postage. This is all you have to do to get a $1 bottle of Vitaline Tablets free. We give you the $1 bottle without cost or obligation to prove what a wonderful remedy Vitaline Tablets are. We know when you have taken them you'll say with a glad heart that you have at last found the right medicine.
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ENCLOSE 10 CENTS IN STAMPS OR COIN, for Postage, Packing, Etc.
AMERICAN HOME TREATMENT CO., Dept. 2, 152 Lake Street, Chicago. I enclose amount for postage and packing. Send at once by mail in plain package, $1.00 bottle Vitaline Tablets, without cost or obligation to me.
NAME .....
ADDRESS .....

Reproduction (⅓ size) of typical advertisements of the "Dr. Rainey Medicine Company" and the "American Home Treatment Company." Notice that the only difference between them is that in the latter Rainey's name has been omitted and his picture replaced by that of another. While "Vitaline" is advertised in papers and magazines as a "sure cure" for a vast number of diseases, its exploiters would not dare put such statements on the label of the Vitaline bottles. The federal government, through the "pure food law," prohibits lying on the label, but it cannot—or at least does not—prohibit the printing of falsehoods in periodicals.

to what they called the "special treatment" department. A question blank would be sent which when filled out by the victim was supposed to be used as a basis for "diagnosing" the case.

On the other hand the American Animal Therapy Co., with which Rainey was connected, markets a "lymph compound" which is recommended for "locomotor ataxia," "paralysis," "loss of memory" and "epilepsy;" this, of course, claims to be an "ethical" (save the mark!) preparation as it is advertised to physicians; thus Rainey seems to have been working both the medical profession and the public.

Atkins and Rainey had frequently quarreled over the method of conducting the business of the "Dr. Rainey Medicine Company" and at the coroner's inquest the evidence indicated that Atkins, who was not a physician, occasionally sent out "literature" which the more conservative—or shrewd—Rainey declared would bring the concern into trouble with the postal authorities. Things finally got to the pass where Rainey with-

Atkins' mailing list. Rainey claimed, however, to have purchased the name from a "letter broker" and the quarrel commenced which ended in Atkins' death. It would be interesting to trace back the chain of events which led up to the homicide; doubtless a poor, humbugged victim—probably a woman—who had at some time written to a conscienceless quack hoping for relief from some imaginary or real ailment; after being "worked" to the extent of her purse and being no longer profitable prey, her letter is sold to the "brokers."

At the inquest it was shown that Atkins, who was interested in several "Men Specialists" concerns, was of a quarrelsome disposition and had at various times threatened Rainey and others. The jury exonerated Rainey and he was released from custody.

Occurrences like these have an economic and sociologic interest. They turn, for an all-too-brief period, the searchlight of publicity into the dark and noisome pit of quackery and nostrum exploitation and make clear the miserable sordid-

ness and fraud inseparable from it. Did the hapless victims but know the pretense, the sham, the ignorance, the utter disregard for anything connected with the patient save his dollars, that characterize the average individual who conducts a mail-order medical concern, it would be but a short time before an outraged and indignant public would force the whole disreputable business out of existence.

## Correspondence

### International Hygiene Exposition, Dresden, 1911

*To the Editor:*—It now seems probable that the United States will not be officially represented at the International Exposition of Hygiene to be held at Dresden next year. This is a most regretable circumstance as the exposition bids fair in many particulars to be highly important in both a scientific and commercial sense. It will be an important and conspicuous step in a movement that is at once humanitarian, altruistic and utilitarian, one that is world-wide in its extent and to be identified with which the United States cannot afford to miss a single opportunity.

The exposition, which is to be opened in May, 1911, under the patronage of the King of Saxony, is to cover an area of about 300,000 square yards located in a large park in the heart of Dresden. The guarantee fund for its promotion was made up some six months ago of $75,000 from the city of Dresden, $50,000 from the kingdom of Saxony, and enough from other sources to make it aggregate $250,000. It was then expected that other German federal states would make similar contributions. The buildings will be put up by the participating countries and are presumed to cost from $12 to $15 a square yard.

The exposition itself contemplates two general classes of exhibits; one will be strictly scientific from various institutions and scientific organization; the other will be commercial and will be derived from leading manufacturing establishments of the different countries. The scientific exhibit is to be grouped according to subject, so that any special branch of hygiene or sanitation in its present state of development can be studied objectively. The adjacent pavilions will be given over to industrial exhibits representing the latest practical application of science to the maintenance of the health and physical welfare of humanity. In addition to these two distinct branches of the exposition there is to be a third devoted to the historical evolution of the subject. This promises to be a most interesting feature as it will embrace demonstrations of the hygiene of the Egyptians, the Indians, the Persians, the Jews, the Greeks, the Romans and other peoples of remote antiquity.

Furthermore, it is understood that, while the greatest scientific precision will be aimed at, a distinct effort will be made to popularize the whole subject by divesting it as nearly as possible of its technical garb. In fact, a distinct department of personal hygiene, designed to teach the people how to maintain their functional powers and thus to conserve their health and prolong and broaden their lives is to be made a distinct feature of the event. In this particular, Germany is simply following its long and well-defined policy of sending its science home to its people—a policy, the results of which are to be seen in the evidences of progress and prosperity discernable to-day in the land of the Kaiser as nowhere else in Europe.

Ambassador Hill, who strives in every way to maintain most cordial relations not only between the governments of Germany and the United States, but between the peoples of the two countries, and who is keenly alive to the scientific and humanitarian importance of the Dresden event, is not losing an opportunity, official or personal, to secure cooperation from America. It is most unfortunate, however, that without respect to the time when that event was first conceived, it was not brought to his attention by its promoters until the very last minute. Indeed, it seems extraordinary that what has evidently been designed as a most important undertaking should have sprung up with such apparent spontaneity and should be forced through with such unusual haste unless possibly the explanation is to be found in the fact that a similar exposition had been previously planned and announced in connection with the International Congress of Hygiene and Demography that is to be held in Washington in 1912. At any rate, the invitation to send a representative to Dresden to attend a Conference of the executive committee of the exposition was not received at the American Embassy in Berlin until within less than 24 hours before that conference of two days' duration was to be opened on February 11 at Dresden. It was too late to communicate with Washington and it was too late to reach Dresden in time for the opening of the conference, but Ambassador Hill of his own initiative requested Mr. Joseph C. Grew, the second secretary of the embassy, to go to Dresden and unofficially attend as much of the conference as possible.

When Mr. Grew arrived at Dresden on the second day of the meeting he found present delegates from all the German capital states and representatives of Chile, China, Denmark, France, Italy, Holland, Austria-Hungary, Portugal, Roumania, Russia and Sweden. The British minister to Saxony was also present but unofficially owing to the lateness of the invitation, from which same cause some other countries were likewise not represented. Mr. Grew made a formal report on the meeting which was referred to Washington by Ambassador Hill with the recommendation that the United States Government take active steps to be officially represented.

It seems, however, that nothing can be done until Congress acts in the matter. This, of course, takes time, too much time it seems, but not more time than is required for similar matters in most other countries. The only exception of which I have heard, is Japan, which, in spite of its depleted treasury, seems to be in a state of preparedness for precisely such events. This was shown by the fact that the envoy that was sent around the world by the Saxon government in the interests of this exposition reached Japan when its parliament was not sitting. There seemed, therefore, no chance to get a commission authorized or to get money appropriated to support such a commission. Yet, somehow, somewhere, about the imperial treasury at Tokio there was found a way by which Japan managed to keep step at Dresden with the march of progress. It would seem wise if the President of these United States could be provided, as the emperor of Japan seems to be provided, with a contingency fund and could be invested with authority to act in precisely such cases as this. As it now stands Congress will not be in session until December; what its temper will be, whether there will be enough of new blood in it to grasp such fundamental problems of progress and of human welfare will depend entirely on the results of the approaching elections. In any event there is hardly a probability that the necessary action can be secured in time for us to take a creditable hand in an event in which our part must be either creditable or no part at all.

All of this goes to show two things:

1. Great international events, to be fairly international, require more time than has been given to the Dresden exposition.

2. Governments ought to be in a greater state of preparedness than is the government of the United States for contingencies such as this.

There is another aspect of the subject that I cannot refrain from mentioning, and I shall do it by a word of caution against a possible spirit of chauvinism that is liable to assert itself in some quarters in America. There ought to be no feeling of resentment in America growing out of the conjugation of circumstances by which Germany in general and Saxony in particular may seem to be engaged in an attempt to forestall interests in the Washington meeting of 1912. Nor should there be any particular feeling because the American idea of an exposition of hygiene bids fair to find its first

exemplification on the eastern side of the Atlantic. The world is large and the republic of science knows no national lines. Any country has a right at any time to have any sort of an exposition for the general welfare. The multiplication of such events only results in a general augmentation of interest. This being true, the attitude of the United States should be to come to Dresden loyally, if there is time to do so creditably, to take an active part in the proceedings, then box up the whole thing and ship it to Washington as a previously fairly well-advertised feature of the real show.

C. A. L. R.

### The Oil Treatment of Pellagra

*To the Editor:*—Much has been written about pellagra, its symptoms, etc., but very little has been written about its successful treatment; some physicians with large experience still believe that no pellagra patient in this country has recovered. Within the past 4 years I have had 16 cases, 7 being so far advanced that little or no treatment was given and the patients all soon died. The other 9 were all without a doubt true cases with all the classic symptoms of diarrhea, offensive stools, dermatitis, red tongue, insomnia, etc., and were treated by the oil method, which no one else so far as I know has used in such cases, with the following results:

The first 3 patients were treated about 4 years ago by means of petroleum emulsion, sulphocarbolates for the diarrhea and Morton wave and static sparks for the insomnia and nervousness. One, a woman, gained 30 pounds and remained symptomatically well for a year; 6 months after stopping all treatment she developed paroxysmal insanity and soon died. The other 2 kept up the petroleum for about one year and are still symptomatically well, though one had very strong religious delusions for some time. A man, treated later, is still taking the petroleum and has gained over 30 pounds and is in very good condition for the past year; though he is still a little nervous it is perhaps as much from fear as anything else because he has been told by so many doctors that he would never get well. Two others are steadily gaining and improving though they have taken the oil only for the past 3 months. Another, a hard-drinking man, was relieved of the severe dermatitis and diarrhea by 3 weeks' treatment and his mental condition cleared up much, but he soon returned to drinking and died.

Another patient has gained 23 pounds within the past 9 months—one teaspoonful of castor oil and 4 drops of turpentine at bedtime being more acceptable to the stomach and stopping the diarrhea better than the petroleum. A patient with chronic diarrhea and colitis of 7 months' standing, in whom the microscope showed no accountable cause, took the same small doses of castor oil and turpentine every night for 5 months and gained 31 pounds. This is simply mentioned to show what a decided effect the oils, neither of which is much absorbed, have on nutrition when kept up for a long period of time. It must be the cleansing and antizymotic effect.

In another case of three years' standing the patient improved for a while but soon had so much nausea that oils were not retained; she developed insanity and died.

The petroleum treatment is not offered as a specific. Though my series of cases is small it shows that the petroleum has certainly had a beneficial effect on almost every patient to whom it has been given if kept up long enough, as some of the patients did not improve much for from 4 to 6 weeks. In 4 of the patients a careful examination of the blood, stools and stomach contents was made which did not, however, show anything of importance—there was little or no hydrochloric acid present. Protozoa resembling the *Cercomonas intestinalis* were found in the stools but have never been considered pathogenic.

I ask the profession to make a patient and persistent trial of this method of treatment and report results. The results so far seem better than those offered by any other method of which I have read, 6 of the 9 patients being still alive, 2 being apparently well for 3 years.

J. W. TORBETT, B.S., M.D., Marlin, Tex.

P.S.—The preparation of petroleum used was that made by S. & D. or P. D. & Co., which contains 33.33 per cent. petroleum and 5 gr. each of hypophosphites of lime and soda to each dram given, being a little stronger than the N. F. preparation.

### The Home Exchange Plan for Foreign Education of Children

*To the Editor:*—I believe that there are many physicians who would like to send their children to school in foreign countries for a year or two, but who hesitate on account of the great expense and the absence of parental care while the children are away. It seems to me that the home exchange plan offers a solution of the problem. Could not you, through THE JOURNAL, make arrangements with British, French and German journals by which a physician here would keep in school and be responsible for a foreign physician's boy or girl in exchange for the same care of his son or daughter in a foreign land? It seems to me that this plan has great possibilities.

C. A. EARLE, M.D., Des Plaines, Ill.

### The Ice-Cap in Poliomyelitis

*To the Editor:*—In THE JOURNAL, Sept. 17, 1910, in the special article on "Epidemic Poliomyelitis," under treatment, you speak of elevation of the spine by pillows to prevent hyperemia of cord. Do you not think that the application of the ice-cap would greatly enhance the effect of this procedure?

In a recent case, that of a child 16 months old, the ice-cap was applied at the onset of the disease. The child usually slept when the ice-cap was applied and was peevish and restless until time for its reapplication. Both legs and part of the right arm were paralyzed. The child is responding freely to treatment. In this case the cold application certainly aided in the treatment and afforded relief to this unfortunate child.

CYRUS W. FRIDY, Philadelphia.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### ARTICLES ON POLIOMYELITIS

*To the Editor:*—Please give me references to recent articles, in English, on acute anterior poliomyelitis.

C. H. TRAVIS, M.D., New Britain, Conn.

ANSWER.—The following are a few of the multitude of articles on this subject which have appeared since the first of this year:

"Acute Anterior Poliomyelitis," by A. J. Rosenberry, in *Southern California Practitioner*, January, 1910.

"Acute Poliomyelitis," by W. P. Herringham, in *Clinical Journal*, London, Jan. 26, 1910.

"Some Aspects of Poliomyelitis," by Sir William Gowers, in *British Medical Journal*, Feb. 5, 1910.

"Anterior Poliomyelitis—Infantile Paralysis," by L. L. Cazenavette, in *New Orleans Medical and Surgical Journal*, February, 1910.

"Acute Anterior Poliomyelitis," by P. J. Peel, in *Chicago Medical Recorder*, February, 1910.

"Anterior Poliomyelitis," by E. J. Melville, in *Vermont Medical Monthly*, March, 1910.

"Acute Anterior Poliomyelitis," by J. W. Cokenower, in *New York Medical Journal*, May 14, 1910.

"Experimental Studies on the Etiology of Acute Poliomyelitis," by I. Strauss and F. M. Huntoon, in *New York Medical Journal*, Jan. 8, 1910; abstracted in THE JOURNAL, Jan. 22, 1910, p. 319.

"Medical Aspects of Anterior Poliomyelitis," by L. R. De Buys; "Anterior Poliomyelitis—Etiology and Pathology," by C. W. Duval; and "Nervous Manifestations of Anterior Poliomyelitis," by E. M. Hummel, all in *New Orleans Medical and Surgical Journal*, March, 1910.

"Contagiousness of Poliomyelitis," by H. W. Hill, in *Journal of the Minnesota State Medical Association and Northwestern Lancet*, March 15, 1910; abstracted in THE JOURNAL, April 23, 1910, p. 1406.

"Anterior Poliomyelitis and Its Treatment by Muscle Training," by J. M. Berry and B. van Denbergh, in *Albany Medical Annals*, April, 1910.

"The Acute Stage of Infantile Paralysis," by O. Medin, of Stockholm, Sweden, and "Early Diagnosis of Poliomyelitis," by G. W. McIntyre, in *St. Paul Medical Journal*, May, 1910.

"The Epidemiology of Poliomyelitis," by Joseph Collins, in THE JOURNAL, June 11, 1910, p. 1925.

"Paralysis of the Neck and Diaphragm in Poliomyelitis," by I. Snow, in THE JOURNAL, June 11, 1910, p. 1929.

"A Possible Method of Infection in Poliomyelitis," by N. M. Shaffer, in *New York Medical Journal*, June 18, 1910.

Abstract of a symposium on poliomyelitis published in report of the meeting of the American Orthopedic Association in THE JOURNAL, July 2, 1910, p. 48.

"Fifty Cases of Poliomyelitis," by J. C. Master, "Clinical Varieties of Poliomyelitis," by H. M. McClanahan, "Acute Poliomyelitis," by F. E. Coulter, and "Poliomyelitis in Polk County, Neb.," by C. A. Anderson, appeared in *Western Medical Review*, August, 1910, and were abstracted in THE JOURNAL, Aug. 27, 1910, p. 802.

"Poliomyelitis." Editorial in THE JOURNAL, Sept. 3, 1910, p. 861.

"Pathology and Bacteriology of Acute Anterior Poliomyelitis," author's abstract of paper by Drs. H. E. Robertson and A. J. Chesley, in THE JOURNAL, Sept. 17, 1910, p. 1013; published in full in *Archives of Internal Medicine*, September, 1910, p. 233.

"Anterior Poliomyelitis: Methods of Diagnosis from Spinal Fluid and Blood in Monkeys and in Human Beings," by F. P. Gay and W. P. Lucas, in *Archives of Internal Medicine*, September, 1910, p. 330.

"Epidemic Poliomyelitis," discussed in Department of Therapeutics, in THE JOURNAL, Sept. 17, 1910, p. 1024.

"Epidemic Poliomyelitis—Infantile Paralysis." Editorial in THE JOURNAL, Sept. 17, 1910, p. 1031.

The following articles by Drs. Flexner and Lewis of the Rockefeller Institute have been published in THE JOURNAL since Jan. 1, 1910:

"Epidemic Poliomyelitis in Monkeys," January 1, p. 45; February 12, p. 535; April 2, p. 1140; May 28, p. 1780, and August 20, 1910, p. 262.

"The Contribution of Experimental to Human Poliomyelitis," by Dr. Flexner alone, Sept. 24, 1910, p. 1105.

## ETIOLOGY AND TREATMENT OF ACNE

*To the Editor:*—Please give me the etiology and latest treatment of acne.

G. G. WHITE, Elkader, Iowa.

ANSWER:—Acne is a disease depending on both general and local causes. One important general cause is autointoxication frequently due to disturbances of the digestive organs and probably consists in the absorption of toxic products originating in the intestinal tract. These toxins lower the resistance of the skin to infections and consequently the sebaceous glands become a nidus for the proliferation of various micro-organisms. Among these, the most prominent are the *Bacillus acne*, described by T. W. Gilchrist, in an article in the *Journal of Cutaneous Diseases*, March, 1903, which was abstracted in THE JOURNAL, April 11, 1903, and various forms of pus cocci, particularly the *Staphylococcus albus*, which is said to be found especially in acne indurata.

The treatment of acne must be varied to suit the individual case. Elimination should be promoted and the diet so regulated that both the gastric and intestinal digestive processes proceed properly and thus prevent autointoxication. The bowels should be kept open by appropriate laxatives and in certain cases colonic flushing will be useful. Other general treatment depends on the condition of the individual patient.

The local treatment of acne depends on the principle of exciting an artificial hyperemia which is subsequently quieted by sedative measures. Accumulations of pus should be evacuated and comedones removed by the aseptic needle and comedo-extractor. Sulphur in lotion or ointment is one of the best applications for stimulating the skin. It may be applied as sulphur ointment U. S. P. or as liquor calcis sulphuratæ N. F. (Vleminckx's solution). Before the application of sulphur it is well to bathe the skin in hot water for a moderate time and thoroughly wash with linimentum saponis mollis (tincture of green soap). This is rinsed off and the skin dried, after which the ointment may be applied. For soothing purposes an aqua calcis and zinc oxid lotion is of value:

| R | |
|---|---|
| Zinci oxidi | 10 |
| Pulveris talci | 8 |
| Glycerini | 8 |
| Sodii biboratis | 8 |
| Aquæ calcis | 120 |
| Aquæ rosæ q. s. ad | 240 |

M. Sig. For external use.

In severe forms, Bier's hyperemic method may be found useful. Therapeutic vaccine injections have been used with considerable success. For these injections a stock or autogenous vaccine may be used. If the stock preparations are employed, the acne bacillus and *Staphylococcus albus* give the best results. In obstinate cases radiotherapy is useful, but should always be used with the greatest caution.

The treatment of acne is discussed in the Department of Therapeutics, in THE JOURNAL, Jan. 30, 1909, p. 384.

## WAS IT A CURE OF "CONGENITAL DEAF-MUTISM?"

*To the Editor:*—A deaf-mute child, aged 3 years, was taken to an aurist. The parents stated that the child had given no signs of hearing since birth, except for very loud noise, and had never had any accident or disease to cause deafness. On inspection, the aurist found that the child responded to a sharp clap of the hands near the head. The tympanic membranes were slightly retracted, and there was a red glow from both middle ears. There were diseased adenoids; otherwise the child was all right. The birth of the child was natural. Removal of the adenoids and treatment developed hearing, and the child learned to talk. Is the aurist justified in claiming to have established hearing and speech for a "congenital deaf-mute?" If not, why?

MAURY M. STAPLER, M.D., Macon, Ga.

ANSWER.—The question asked by our correspondent is one capable of a double answer. "Congenital deaf-mutism," as generally understood, refers to a congenital, incurable, labyrinthine disease. Practically all children who have never talked, and who apparently do not hear by the time they are 2 or 3 years of age, have been condemned to this class and have been regarded as hopeless. Recently, however, some of these children, on careful and intelligent examination, have been found to be afflicted with prematurely developed adenoids, or more or less complete closure of the Eustachian tubes—or both—and relief of this condition, by operation and treatment, has resulted in the production of useful hearing. It is likely that the case to which our correspondent refers belongs to this class of relievable cases. The question as to whether the condition is congenital or not is a delicate, uncertain and technical one. It may have been—or it may not have been. Very likely it was, but the case is not one of the kind which is usually referred to when "congenital deaf-mutism" is mentioned. Nomenclature should be based on pathology. It is not in these cases. Further investigations will compel a more exact nomenclature.

## VESICULAR STOMATITIS

*To the Editor:*—Please publish some information relative to this condition: A patient of mine for many years has had recurrent stomatitis in the form of small discrete ulcers. There is no discernible cause that I have been able to find. Burning with trichloracetic acid relieves the pain for a short time. The ulcers appear in great numbers and then disappear, only to reappear.

X. Y. Z.

ANSWER:—This condition is a form of vesicular stomatitis. Its etiology is not well understood but it appears to be favored by depressed states and by disturbance of the digestive tract. The treatment indicated above or touching with a stick of silver nitrate is usually efficient. The urine should be examined for indican or other indications of auto-intoxication and search should be made for any general condition which may serve as an etiologic factor. Good hygiene may assist in preventing the recurrence.

## INTERNATIONAL HYGIENE EXHIBITION

*To the Editor:*—Please give the date of the International Sanitary Congress, which will be held in Dresden.

E. M. VANBUSKIRK, Fort Wayne, Ind.

ANSWER:—Our correspondent probably means the International Hygiene Exposition, which is to be held in Dresden, May to October, 1911. A letter appears in the Correspondence Department of this issue on the subject.

## PARALYSIS (POLIOMYELITIS?) IN YOUNG ANIMALS

*To the Editor*:—Owing to the wide-spread interest in the etiology of anterior poliomyelitis, I take the liberty of reporting the following coincidence. I have had several cases of this disease, but in no instance could I trace it to any preexisting disease or condition. Recently I was informed by the parents of one of my patients that about three weeks prior to the sickness of the child a spring pig became paralyzed in its hind legs and a week later two more pigs were affected in the same way. The paralysis lasted about two weeks, during which time the pigs were helpless and then gradually improved.

I have talked with farmers who tell me of several such instances among young pigs, but they ascribe it to overfeeding. What relation this trouble among the pigs bore to the paralysis of the child is not known.

MERTON FIELD, Minnesota Lake, Minn.

## ESPERANTO GRAMMAR

*To the Editor:*—As there is much irresponsible criticism of Esperanto, especially on occasion of the recent international convention in Washington, I want to offer an opportunity for every thinker to judge for himself. I have had prepared 100,000 brief grammars of the language in pamphlet form, and will send one free to any person who is sufficiently interested to ask for it, enclosing stamp for reply. I think it really due to this great movement for an international auxiliary language, which now embraces fifty nations in its scope, that all interested have the opportunity of judging for themselves.

700 E. Fortieth Street, Chicago. ARTHUR BAKER.

# The Public Service

## Medical Department, U. S. Army

Changes for the week ended Sept. 24, 1910.

Long, Charles J., dent. surg., Sept. 16, left Madison Bks,, N. Y., on 2 months' leave of absence.

Munson, Edward L., maj., Sept. 17th, is detailed to attend and deliver lecture at the Twelfth Annual Convention of the National Guard Association of the United States at St. Louis, Oct. 3, 1910.

Frick, Euclid B., lieut. col., Sept. 13th, in addition to his present duties will take charge of the office of the chief surgeon, Department of California, during the absence of Lt. Col. H. S. T. Harris, Med. Corps, at Camp Atascadero, Cal.

Ashburn, P. M., maj., Sept. 14, left Army General Hosp., San Francisco, enroute to Camp Atascadero, Cal.

Gibson, Paul W., M.R.C., Sept. 15, left Ft. Yellowstone, Wyo., on 10 days leave of absence.

Barket, John A., lieut., Sept. 15, left Ft. Riley, Kansas, with the 17th Cavalry, on practice march.

Cole, C. C., capt., Sept. 16, granted leave of absence to and including Oct. 15, 1910.

Marshall, John S., E. S. and D. S., Sept. 16, ordered to Columbus Barracks, Ohio, for duty

Scott, Harold O., D. S., Sept. 16, relieved from duty at Columbus Barracks, Ohio, and ordered to Ft. Hamilton, N. Y., for duty.

Norriss, H. C. R., M.R.C., Sept. 16, granted leave of absence for one month and 19 days. Sept. 16, left Vancouver Barracks, Wash., enroute to Martin, N. D., for further orders.

Lauderdale, D. S., civil engineer, Sept. 17, left Ft. Logan, Colo., on 10 days' leave of absence.

Bayley, R. C., lieut., Sept. 19, relieved from further duty in Philippine Div., to take effect on arrival at San Francisco, on transport *Logan* and will report to Supt. Army Transport Service for assignment to duty as surgeon of the *Logan*.

Cowles, Calvin D., Jr., lieut., Sept. 19, will on being relieved from duty as surgeon of the transport *Logan*, by Lieut. Bayley, report by telegraph to the Adjutant General of the Army for further orders.

Kerr, Robert W., lieut., Sept. 19, relieved from further duty in the Philippine Div., to take effect on arrival at San Francisco, on transport *Sheridan*, will report to the Supt. Army Transport Service for assignment as surgeon of the *Sheridan*.

Tasker, Arthur N., lieut., Sept. 19, will on being relieved from duty as surgeon of the transport *Sheridan*, by Lieutenant Kerr, report by telegraph to the Adjutant General of the Army, for further orders.

The following named first lieutenants, Medical Reserve Corps, recently appointed, are ordered to active service, to take effect Sept. 20, 1910, and will proceed to this city and report in person, at 9 o'clock, a. m., Oct. 1, 1910, to Col. Louis A. La Garde, Med. Corps, President of the Army Medical School, for a course of instruction at that school: Fred R. Burnside, Frank N. Chilton, John S. Coulter, William Denton, Harry G. Ford, James F. Johnston, William P. Lamb, Carl A. Scherer, Gordon B. Underwood, James H. Wilson, Faris M. Blair, Albert P. Clark, Edgar D. Craft, George G. Divins, Frederick H. Foucar, Lloyd A. Keflauver, Charles E. McBrayer, Joseph L. Siner, Alleyne von Schrader, William T. Cade, Jr., Dillis S. Connor, Samuel S. Creighton, Lauren S. Eckels, Bert R. Huntington, George B. Lake, George E. Pariseau, John H. Trinder, John M. Willis.

Le Wald, Leon T., capt., resignation of his commission as an officer of the Army accepted, to take effect Sept. 25, 1910.

Norris, Harry C., M.R.C., Sept. 20, honorably discharged from the service of the United States to take effect Nov. 7, 1910.

Cole, Blase, M.R.C., Sept. 20, relieved from duty at Ft. Crook, Nebr., and ordered to proceed to this city for a course of instruction at the Army Medical School, commencing Oct. 1, 1910.

Pierson, R. H., capt., September 17, left Vancouver Barracks, Wash., enroute to Ft. Flagler, Wash., for duty.

Register, E. C., M.R.C., Sept. 19, left Ft. H. C. Wright, N. Y., on 10 days' leave of absence.

Knox, Howard A., lieut., Sept. 22, left from detached duty to Ft. Myer, Va., on 10 days' leave of absence.

Heflebower, Roy C., lieut., Sept. 22, left Ft. Hamilton, enroute to Ft. Slocum, N. Y., for temporary duty.

Flynn, Thomas J., M.R.C., Sept. 21, 1910, the leave of absence granted him by S. O. No. 156, Sept. 17, 1910, Fort Ethan Allen, Vermont, is extended three days.

Crum, Wayne H., lieut., Sept. 21, granted ten days' leave of absence.

Davis, Wm. R., capt., Sept. 21, granted two months' leave of absence.

Sweazey, Verge E., capt., Sept. 21, now on leave of absence, will repair to this city and report in person to the Adjutant General of the Army, for further orders.

## Medical Corps, U. S. Navy

Changes for the week ended Sept. 24, 1910.

Pleadwell, F. L., surgeon, detached from the Naval War College, Newport, R. I., and ordered to temporary duty in the Bureau of Medicine and Surgery, Navy Department.

Koltes, F. X., P. A. surgeon, commissioned P. A. surgeon from May 4.

Dollard, H. L., P. A. surgeon, commissioned P. A. surgeon from July 12.

May H. A., P. A. surgeon, detached from the *Charleston* and ordered to the Naval Hospital, Mare Island, Cal.

## U. S. Public Health and Marine-Hospital Service

Changes for the week ended Sept. 21, 1910.

Cassaway, James M., surgeon, granted 1 month's leave of absence from Sept. 7, 1910, on account of sickness.

White, J. H., surgeon, granted 7 days' leave of absence from Sept. 17, 1910.

Williams, L. L., surgeon, granted 7 days' leave of absence from Sept. 19, 1910, under paragraph 189, Service Regulations.

McIntosh, W. P., surgeon, granted 7 days' leave of absence from Sept. 23, 1910.

Parker, H. B., P. A. surgeon, granted 3 days' leave of absence from Aug. 25, 1910, on account of sickness.

Anderson, John F., P. A. surgeon, directed to proceed to Ellis Island, N. Y., on special temporary duty.

Goldberger, Joseph, P. A. surgeon, granted 1 month's leave of absence from Sept. 26, 1910.

Schereschewsky, J. W., P. A. surgeon, directed to report at Bureau on special temporary duty.

Francis, Edward, P. A. surgeon, directed to proceed to Philadelphia, New York and Detroit, on special temporary duty.

McCoy, George W., P. A. surgeon, directed to proceed to Berkeley, Cal., on special temporary duty.

Warren, B. S., P. A. surgeon, detailed to represent the Service at the meeting of the state health officers, to be held in Waterloo, Iowa, Sept. 20, 1910.

Rucker, William C., P. A. surgeon, leave of absence for 1 year without pay from June 4, 1910, amended to read from June 4, to Sept. 14, 1910. Granted 10 days' leave of absence from Sept. 14, 1910.

Stanton, J. G., acting asst.-surgeon, granted 26 days' leave of absence from Sept. 21, 1910.

Curley, C. P., acting asst.-surgeon, granted 21 days' leave of absence from Sept. 22, 1910.

Board of medical officers convened to meet at the marine hospital, San Francisco, Sept. 26, 1910, for the examination of Assistant Surgeon Friench Simpson, to determine his fitness for promotion to the grade of Passed Assistant Surgeon. Detail for the board: Surgeon Rupert Blue, chairman; Passed Assistant Surgeon F. E. Trotter; Passed Assistant Surgeon R. E. Ebersole, recorder.

Board of medical officers convened to meet at the marine hospital, Stapleton, N. Y., Sept. 26, 1910, for the examination of Assistant Surgeon R. A. Herring, to determine his fitness for promotion to the grade of Passed Assistant Surgeon. Detail for the board: Surgeon Hiram W. Austin, chairman; Passed Assistant Surgeon W. A. Korn; Passed Assistant Surgeon George L. Collins, recorder.

Board of medical officers convened to meet at Philadelphia, Pa., Sept. 21, 1910, for the purpose of determining the physical condition of Surgeon Eugene Wasdin. Detail for the board: Surgeon Hiram W. Austin, chairman and Surgeon W. G. Stimpson, recorder.

# Society Proceedings

## COMING MEETINGS

American Association of Railway Surgeons, Chicago, October 19-21.
Colorado State Med. Soc., Colorado Springs, October 11.
Delaware State Med. Soc., Wilmington, October 11.
Hawaiian Territorial Med. Assn., Honolulu, November 26-28.
Idaho State Medical Association, Boise, October 6-7.
Medical Association of the Southwest, Wichita, Kan., Oct. 11-12.
Minnesota State Medical Association, Minneapolis, October 6-7.
Pennsylvania, Medical Society of State of, Pittsburg, October 3-6.
Southern Medical Assn., Nashville, November 8-10.
Utah State Medical Association, Salt Lake City, October 3-4.
Vermont State Medical Society, St. Albans, October 13-14.
Virginia, Medical Society of, Norfolk, October 25-28.
West Virginia State Medical Assn., Parkersburg, October 5-7.

## MISSISSIPPI VALLEY MEDICAL ASSOCIATION

*Thirty-Sixth Annual Meeting, Held at Detroit, Sept. 13-15, 1910*

*(Concluded from page 1135)*

### President's Address: Teaching of Clinical Psychiatry; A Medical Educational Problem

DR. FRANK P. NORBURY, Hospital, Ill.: The opportunities at hand should be utilized, new ones developed, higher ideals created, and ethical educational standards readjusted. The fundamental fact of the present controversy regarding medical education is that it is a part of the educational propaganda of the century—a world movement. In this country, guided in constructive analysis in medical education by the Council on Medical Education of the American Medical Association, this progress is based first on the integration of the educational system; second, on the standardizing of undergraduate work; third, on the standardizing of professional courses in medicine. A virile contributory constructive power is the report of the Carnegie Foundation for the Advancement of Teaching. Modern medical education is in the transitory stage in teaching clinical medicine. This transition began with Osler's work at Johns Hopkins when he demonstrated that "teaching hath her victories no less than research." Clinical medicine to-day includes the interpreters as well as the research workers. Medical sociology is the enlarged appreciation of the value of clinical medicine extended to the problems of etiology, preventive medicine, occupational diseases, and general and special civic problems. The scope and value of such work is unappreciated by the unthinking masses of our profession. Clinical psychiatry is prominent

in this field of newer clinical activity. It is in contact with more points in life, its realities, its ignorance, its prejudices, its ethical discordances, and falsifications, than any other department of medicine. The teacher must be a biologist in its widest clinical interpretation, a sociologist that he may grasp all etiologic factors, and an internist that he may be in touch with all of the physical factors entering into the problem. Modern medical teaching must give to the student the opportunity to see the whole at near range. The teaching of psychiatry is a state need, just as much as any other problem of preventive medicine.

### Address in Surgery: Diagnosis of Surgical Lesions of the Kidney by the X-Ray and the Cystoscope

DR. LOUIS FRANK, Louisville, Ky.: Although the diagnosis of the character of new growths in the kidney may be impossible before operation, the recognition of a surgical lesion and of the surgical indications is not, as a rule, attended with great difficulty, provided thorough, painstaking and complete examination of the individual is made. In renal calculus the cystoscope and the radiograph furnish a means for physical examination which in the presence of even obscure symptoms will render the diagnosis in most cases practically certain. The cystoscopic examination frequently shows a swollen ureteral orifice. The passage of the ureteral catheter will at once show from which kidney the blood or pus in the urine is coming. The cystoscope is not nearly so valuable an aid as the Roentgen-ray. It does show whether one kidney alone is involved, or whether or not a kidney has ceased to functionate. As a confirmatory diagnostic means the greatest value of the radiograph is in connection with renal calculi. The predominant signs of most renal affections of a surgical character are pain, hemorrhage, urinary disturbance, and tumor. One or more may be absent, or they may all be present in any given case.

### Address in Medicine: The Modern Physician, His Successes, His Failures, His Future

DR. JOHN K. MITCHELL, Philadelphia: A time will come, since the disappearance of all disease is unlikely, when governments will make a more organized contest against it, and will teach and enlist all physicians in a common army as now they educate and pay the soldier. This must come, because with improved sanitation and the constant advance of preventive means, illness will grow infrequent, so that unless he is a paid servant of the state the physician will not be able to exist. When that army is enlisted, the occurrence of preventable diseases will be as much a matter for court martial and the punishment of the person who allowed it to pass him as the failure in duty of a soldier asleep at his post. In that golden future in which sickness will be as rare as war is now, instead of being a single-handed fighter, the physician will serve as an enlisted man in the great battle for life and strength against illness and pain; he will have no new duties, perhaps, but new powers—ability to enforce obedience to laws of health—until, under wise ways of life, death, the one unmedicinable disease, shall come only to the aged, approaching without notice, to be met without fear, bringing an ending peaceful and calm after an active life and a quiet old age.

### Pulmonary Tuberculosis and Syphilis

DR. ROBERT H. BABCOCK, Chicago, discussed the relationship of these diseases and drew the following conclusions:

1. The effect of the association of pulmonary tuberculosis and syphilis seems to depend largely on the stage of the primary disease during which the second infection is acquired.
2. The acquisition of syphilis during the incipient or early period of tuberculosis appears to be of a negative influence or even in some instances to exert a retarding or curative effect on the tuberculosis.
3. Syphilis acquired by a consumptive in an advanced stage is likely to aid the downward progress of the tuberculosis.
4. Tuberculosis when developed during the primary or secondary stage of syphilis offers a bad prognosis and is apt to run a rapid course.
5. When pulmonary tuberculosis develops during the third or late stage of syphilis, it is apt to pursue a slow course, probably because of the tendency of the lues to sclerosis during this stage.
6. The association of these two diseases does not preclude the mercurial treatment of the syphilis by intramuscular injections and inunctions, but iodin if administered at all must be used cautiously because of its tendency to hasten softening of the tuberculous foci.
7. During the antisyphilitic medication there should be no relaxation in the hygienic measures recognized as necessary in the management of the tuberculosis.

### The Interpretation of Jaundice

DR. C. N. SMITH, Toledo, Ohio, gave an interpretation of jaundice as observed in gallstone disease and its associated conditions—the interpretation of a symptom which is both infrequent and inconstant, and, at best, indicative only of complications, or terminal events.

#### DISCUSSION

DR. J. H. CARSTENS, Detroit: Catarrhal jaundice is caused by gastroduodenal catarrh, so-called. A patient will have jaundice and in the course of five or six weeks it will disappear, and whether treatment has any effect or not I have grave doubts. I had this form of jaundice myself. I took everything my physicians told me to take—sweet oil, calomel, and many other things— but the jaundice continued. I then restricted my diet to nitrogenous food, and did not take any carbohydrates, oils, fats, etc., but some good lean beef, some eggs and water, and in a short time the jaundice disappeared.

DR. R. N. MURRAY, Flint, Mich.: After suffering from jaundice for a considerable period of time and having tried various remedies, at the request of a Flint physician I took ammonium hydrochlorid in doses of from 10 to 15 grains every 2 hours, and in 4 days the jaundice cleared up.

### A New Principle in Treatment of Exophthalmic Goiter

DR. G. W. CRILE, Cleveland, Ohio: The benefits which follow the ligation of the superior thyroid artery are due for the most part to the break of the nerve supply which is inevitable in the course of the ligation. In exophthalmic goiter the thyroid shows a work hyperplasia, and the brain cells show a work exhaustion. In this condition the brain sends a more or less constant flow of stimuli into the thyroid, and which responds by an increase in its secretion. This increased secretion causes an increased activity of the brain cells. In this manner the brain and the thyroid reciprocally goad each other, and this deadlock, if not broken, continues until one or the other is worn out. This, I believe, is the explanation of the curious ending one occasionally observes, namely, the sequence of myxedema and exophthalmic goiter. Breaking of the nerve connection between the brain and the thyroid gland renders the disease curable. In no case is a cure effected by operation alone, and no patient is cured until the thyroid and the brain are both restored to the normal. This is best secured by operating in such a manner that there is no excitation of the nervous system, nor of the thyroid; hence no volatile outbursts during or after the operation, and no operative danger; the patient then should be placed in a rest cure for a month or more, depending on the severity of the disease. If, on the other hand, the patient after the operation is at once immersed in the environment in which the disease originated, there will be many disappointments. The plan of treatment by a combination of a benign operation, followed by a prolonged rest cure, will restore the patient, in so far as tissues are not already irreparably destroyed, to the bloom of health.

### Surgery of the Great Sciatic Nerve

DR. B. M. RICKETTS, Cincinnati, reported two cases of complete severance of this nerve with subsequent anastomosis, and drew the following conclusions:

1. Compression for sciatic neuralgia hardly justifies the effort.
2. Acupuncture with the injection of electricity or medicaments through an open incision is to be recommended.
3. Acupuncture without open incision is most difficult and uncertain to accomplish good results.
4. The use of a metal wire and tube for direct multiple injections should be encouraged.
5. Stretching the nerve for neuralgia has been more or less beneficial, and second in choice before more radical measures are employed.
6. Neurotomy without suture is to be condemned, but it should be employed before sacrificing any of the nerve tissue.
7. Neurectomy is the last of surgical measures to be employed for neuralgia.
8. Neurorrhaphy (primary or secondary) should be done in cases in which the nerve has been partially or completely severed by any cause.

9. The great sciatic nerve may be completely divided and may remain so indefinitely without great loss of sensation.
10. Both sensation and motion may be improved or completely restored by coapting the severed ends with sutures.
11. A small needle and silk are attended with less trauma than those of larger size.
12. Anesthesia may be local or general.

### Surgery of Musculospiral Paralysis

DR. A. H. BARKLEY, Lexington, Ky., drew the following conclusions:

1. Many patients have been operated on but comparatively few cases have been reported.
2. In cases of trauma, associated injury of the musculospiral nerve may be and frequently is overlooked.
3. The anatomic position of this nerve renders it peculiarly liable to trauma.
4. Injuries, such as fractures, falls and blows, are the most frequent cause in the order named.
5. The paralysis occurs with equal frequency in both arms, the middle and lower third being the most often affected.
6. The musculospiral nerve is injured oftener than any other nerve and the injury not infrequently serves as ground for legal action.
7. The condition is more frequent in males and may occur at any age, more especially between 10 and 30 years.
8. In cases in which complete loss of sensation and motor function follows severe injury, the probabilities are that the nerve has been injured and operative interference is indicated. In cases following slight trauma the patients often recover without operation; however, if no improvement is noticed after 2 or 3 months, operation is justified.
9. Secondary cases sometimes present technical difficulties not present in primary cases.
10. No one symptom is pathognomonic and the pathologic condition varies so widely that it is impossible to state before operation with much certainty the exact condition present in a given case.
11. Prognosis is good in clean cases. Especially is this true when operation has been resorted to early. One of the most important determining factors is the length of time the injury to the nerve existed.
12. Operative treatment depends on the individual case; the earlier the operation the better the result. Small round needles and fine silk have given best results.
13. All patients with injuries to the arm, especially fractures, should be impressed with the possibility of the development of musculospiral paralysis.

### Rôle of the B. Coli Communis in Acute and Chronic Dilatation of the Stomach

DR. F. B. TURCK, Chicago: The *B. coli* plays a part in the gastrointestinal tract in producing lesions in the liver, kidney, stomach and other organs. Experiments were begun with intravenous and intraperitoneal injections into dogs, rabbits, guinea-pigs and rats. The results obtained were variable and inconstant. On feeding animals with bouillon cultures of the *B. coli* daily over a period ranging from 3 to 14 months, lesions were found in the stomach, duodenum, liver, kidney, brain and spinal cord, varying according to the methods, quantity and character of culture. It was found that animals fed with cultures of *B. coli* would acquire acute or chronic dilatation of the stomach by overworking or overloading the stomach. Examination of the blood showed that it remained sterile during the experiments, and the heart's blood at death was also sterile. In feeding cultures of the bacillus pronounced changes were revealed in the blood and tissues. Agglutination of *B. coli* by the dog's serum was noted; hemolysis of the blood was evident; cytolysis and autocytolysis of the cells of the mucous membrane of the stomach, kidney, liver and other organs were marked on microscopic examination. But there was no bacteriemia, no inflammatory reaction in the form of round-cell infiltration, such as one would expect in a reactionary inflammation induced by pyogenic micro-organisms or toxins. It was not the picture of reaction to an infection, but rather a systemic condition of induced cellular change. When feeding was continuous, an acute process was the characteristic picture. When feeding was stopped, the lesions healed. If the feeding was interrupted for a considerable period at short intervals, then resumed, chronic lesions were produced, with round-cell infiltration. It would seem that chronic lesions were simply acute processes interrupted at certain intervals, or a series of acute processes. To obtain spontaneous acute or chronic dilatation of the stomach in animals, it was necessary to feed the animals with cultures of *B. coli* over a long period of time, followed by over-use of the stomach, especially increasing the intragastric pressure. The usual methods of treatment are gastric lavage; diet frequent, but light meals; drugs, such as tonics, laxatives, alkalies, or acid, as indicated; electricity and exercise; hydrotherapy, balneology, rest and recreation. On the failure of these methods, surgical operation is indicated.

### Acute Abdominal Manifestations of Syphilis

DR. LOUIS A. LEVISON, Toledo, Ohio, read a paper on this subject which he summarized as follows:

1. Syphilis showing acute abdominal manifestations is not uncommon, but is not generally recognized.
2. The liver is the organ most often affected.
3. Abdominal manifestations occur more often in the tertiary stage.
4. Syphilis of the stomach can simulate most of the ordinary gastric diseases.
5. The symptoms of acute abdominal manifestations of syphilis are in no way diagnostic and include pain, tenderness, fever, jaundice, chills and sweats.
6. The gastric crises of tabes may be considered syphilitic in nature.

### Etiology of the Functional Neuroses

DR. ELEANORA S. EVERHARD AND DR. GERTRUDE FELKER, Dayton, Ohio, contributed a joint paper on this subject, in which they drew the following conclusions:

1. The common element in the attributed causes of the functional neuroses is to be found in the fact that the mental processes are not directed; therefore, the patient is the victim of any stimulus which chance may keep before the mind, and that there is no limit to the destruction of efficiency which may result.
2. Those symptoms commonly called nervousness are worthy of serious consideration because they indicate some degree of lack of control of nerve processes.
3. Self-indulgence by training the mind to follow the lines of least resistance predisposes to these neuroses.
4. The value of living in accord with the laws of hygiene cannot be overestimated, both because of its influence on nutrition, and because it requires a measure of self-control, but that alone is insufficient.
5. Conditions of life which demand of the individual, in his vocation or avocation, less exercise of attention and will than he is capable of enduring without fatigue, bear to his nervous system the same relation that lack of muscular exercise bear to his muscular system.
6. Intelligent education at any age is effective, but since the ideal is prevention, the habit of directing mental processes should be established early.

### Standardization of Bacterins

DR. R. T. PETTIT, Ottawa, Ill.: The value of bacterin therapy as a general aid to local treatment in certain types of bacterial infections is pretty well established. In the preparation of vaccines I do not try to estimate the number of bacteria present in a given volume. I take up a twenty-four hour blood agar growth of streptococci in a definite amount of salt solution, shake thoroughly, centrifuge to throw down the clumps, put in a bottle specially prepared and kill by heat or carbolic acid. Then I make a 1/10 of 1/100 dilution of this full emulsion and give an initial dose of 5 c.c. of the 1/100 dilution. This induces very little or no reaction. The dosage is then increased up through the 1/10 dilution and full emulsion to the point of local reaction. Then I proceed slowly, keeping in mind that the reaction induced and results obtained are the true indices of dosage. The reaction to be aimed at is a slight or moderate local reaction, an area of redness about the size of a dollar, without the localizing or general phenomena. By using increasing doses up through a series of dilutions this can be procured with a fair degree of accuracy and an estimation of the number of bacteria used is entirely superfluous. The full emulsion can be called 100 per cent. and 10 per cent. and 1 per cent. dilution of this full emulsion may be made. The doses can be recorded as 1, 2, 5, 7 c.c., etc., of the 1 per cent., 10 per cent. or 100 per cent. emulsions. The advantages of a dilution method of estimating bacterial suspensions over a numerical are several. 1. The reaction, the real index of dosage is relied upon and the empirical administration of bacterins is made less possible. 2. An index of antibody production is aimed at. 3. By using this method vaccines can be prepared with much greater rapidity, at least an hour is saved on each bacterin prepared, and if bacterins prove to be of value in acute infections—and the recent work of Dr. Rosenow, of Chicago, on artificial immunization in pneumonia seems to point in this direction—the time saved will be an important factor.

### Treatment of Pernicious Anemia Associated with Achylia Gastrica

DR. A. C. CROFTAN, Chicago, submitted a clinical report in regard to the treatment of a certain group of pernicious anemia cases and described three cases in which the patients had been improved rapidly and have remained symptomatically well, without remissions, to date. The one constant factor

seen in the cases of pernicious anemia observed during a period of years that were not distinctly attributed to the effect of syphilis, carcinoma, parasites or profound and continuous loss of blood was a lack of hydrochloric acid from the stomach contents, associated with a variety of digestive disturbances, allied with varying degrees of chronic undernutrition. That all cases of hyperchlorhydria and all cases of chronic undernutrition do not develop pernicious anemia calls for the inclusion of some specific factor or factors, hitherto unknown. At all events, the supplying of large quantities of hydrochloric acid, together with abundant proteids by mouth and by rectum, seemed a favorable point of attack and was persistently carried through with gratifying results. From the results obtained, the conclusion was drawn that a trial of this plan in this group of cases is decidedly worth while and seem to produce results not otherwise obtainable by any means so far described.

### Diagnosis of Trifacial Neuralgia

DR. H. T. PATRICK, Chicago: In the majority of cases the diagnosis of tic douloureux should be easy and certain, as the traits of the disease are few and striking. But a number of other disorders have been referred to me as trifacial neuralgia; the most frequent have been migraine and sinus disease. Others were syphilis, brain tumor, alveolar abscess, and other dental disease, nasal disease, herpes zoster, neurasthenia and lesion of the optic thalamus. The pain of trifacial neuralgia is practically unique. There is nothing else just like it. It is short and sharp, in the beginning only a flash or jab or shot. The interval may be anywhere from a second or two to weeks or months. In the fully developed disorder the paroxysms may last a minute or two and the free intervals be so short that the pain seems continuous. It never really is so. Nearly every patient has intermissions of weeks, months, or even years, during which he is entirely free from pain. One of the most striking peculiarities of the affection is that the paroxysms or jabs of pain are started by slight peripheral irritation, such as washing the face, using a handkerchief, stroking the mustache or the touch of a glass to the lips. I think that the automatic act of winking often acts as an excitant. Such slight sensory stimulus in the area of one division of the nerve may occasion pain in another division. For instance, touching the lower lip may start a pain not in this region, but in the supraorbital area.

### Water, the Main Factor in the Prevention of Disease

DR. J. C. MINOR, Hot Springs, Ark.: Nutrition and elimination are the main factors in maintaining health; but of the two elimination is absolutely necessary and must be continuous and invariably performed equally by the sewers of the body. There is little or no vicarious action in the emunction of health and disease. One cannot flush sewers without water and if regular flushing is to be done the water must be furnished the body regularly, and the purer the better. Normal resisting power prevents invasion of any and all diseases; it depends on normal distribution of food, normal lubrication of all body structures and normal excretion of all waste products. Unless food be distributed to the system properly it will become a detriment instead of a help. It cannot be distributed properly without the proper amount of water taken in at the proper time. The stomach is the kitchen in which pabulum is prepared for the system. The small intestine is the table from which the system is served. The system will be served with only just enough, the remainder is thrown through the cecal valve into the sewer. If food is badly digested the system rejects it. If food be more than the system requires the surplus is also rejected. All rejected food is an irritant. May it not be a cause for appendicitis? There is a proper time for taking the proper amount of water. One's judgment should govern the measure of water to be taken with food. To take too much water just before, during or just after a meal, would, so to speak, be to put out the fire in the kitchen, while not enough fluid would compel the stomach to borrow too heavily from the systemic volume. The one would retard digestion and the other would give imperfect digestion.

### Gradual Evolution of a Sane Therapy in Tuberculosis

DR. F. M. POTTENGER, Monrovia, Cal.: The position of the sanatorium in the rational treatment of tuberculosis is important. If the sanatorium is conducted on the proper lines it affords the best circumstances under which the known measures, which have influence in building up and curing the patient, may be applied. The home treatment, however, is one of the greatest boons to tuberculous patients, because most patients are not able to be treated in sanatoria and must be treated in their own homes. The true position of home treatment can be readily understood by the fact that it is an attempt to apply sanatorium discipline and sanatorium conditions to the home.

### Intestinal Surgery with a Demonstration of a New Method of Suturing the Bowel

DR. A. E. BENJAMIN, Minneapolis: The various instruments and appliances formerly used to facilitate the surgeon in his work on the intestines have almost all been discarded for the simple but efficient method of intestinal anastomosis by thread and needle. The work should be carefully but rapidly performed. A positive blood supply to the tissues making up the anastomosis is necessary. The end-to-end method is not so certain; therefore, the side-to-side anastomosis should be chosen when convenient. The evolution of the intestinal suture has brought us to the point where we are certain of good results, when the sutures are properly applied and are of the right material. Non-absorbable suture material should be cast off into the lumen of the intestine after serving its period of usefulness, and this is best accomplished when used for the inner layer; there is then less destruction of tissue. When placed externally it promotes unnecessary adhesions, plastic exudate and fibrous bands. It may interfere with proper bowel function, because of its prolonged irritation. Absorbable suture material used for the outer layer is soon taken care of and does not cripple the action of the intestine. The application of the suture in intestinal work has been carefully studied It must serve the purposes of controlling hemorrhage, proper coaptation of the tissues, security against leakage, must avoid pursing, be quickly introduced and not strangulate the tissue. The back-lock stitch of Pagenstecher's thread as applied by the author for the inner-layer serves all these purposes. Experimental work has demonstrated that chromic catgut lasts sufficiently long when employed as the outer suture for positive and firm union to occur. The after-treatment of cases of suturing the bowel should be carefully supervised by limiting the diet, starvation treatment, if necessary, until the union is sufficiently strong before it becomes necessary for the bowels to be called on to pass their contents onward. A perfect, clean and satisfactory result is obtained with the inner Pagenstecher lock-stitch, and a chromic catgut stitch for the outer in intestinal anastomosis.

### Other Papers Read

The following papers were also read: "Requirements and Limitations of Nitrous Oxid and Oxygen Anesthesia," by Dr. C. K. Teter, Cleveland; "Myositis Ossificans Progressiva," by Dr. A. R. Elliott, Chicago; "Neurologic and Psychiatric Aspect of Tuberculosis," by Dr. C. H. Hughes, St. Louis; "Preliminary Report of Cases Treated by Spengler's Tuberculosis Immune Blood," by Dr. W. F. Woolston, Chicago; "Operation for Cleft Palate," by Dr. G. V. I. Brown, Milwaukee; "Office Treatment of Antral Disease," by Dr. W. W. Pennell, Mt. Vernon, Ohio; "Prostatic Hypertropy," by Dr. J. E. Cannaday, Charleston, W. Va.; "Wassermann Reaction," by Dr. W. T. Mefford, Chicago; "Pyloric Stenosis in the Infant," by Dr. W. D. Haines, Cincinnati; "Pleural Effusions, Their Diagnosis and Treatment," by Dr. E. B. Montgomery, Quincy, Ill.; "Psychic Factor in the Causation of Certain Functional Psychoses," by Dr. C. F. Read, Hospital, Ill.; "Rôle of Physician, Philanthropist, Publicist and Politician Regarding a Federal Department of Health," by Dr. L. H. Montgomery, Chicago; "Non-Operative Treatment of the Prolapsed and Dilated Stomach and Abdominal Viscera," by Dr. N. Rosewater, Cleveland.

## AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION

*Twentieth Annual Convention, held at Saratoga Springs, N. Y., Sept. 13-15, 1910*

The President, DR. T. D. CROTHERS, Hartford, Conn., in the Chair

### The Physics of Light Therapy

DR. T. D. CROTHERS, Hartford, Conn., reported an exhaustive study of the theories of light, of the many forms and modifications of light, and of the diverse ways in which light is utilized in treatment of disease.

### Report on Phototherapy and Apparatus

DR. C. R. DICKSON, Toronto, Canada: Further observations have served to confirm the theory, which is now a well-established fact, that light rays do penetrate the skin and underlying tissues and exert their influence not alone locally, as when concentrated in the treatment of local lesions even to the point of desiccation and cauterization, but are also taken up by the circulation and induce systemic changes not equaled by any other physical agent.

### Report on Dietetics

DR. BYRON S. PRICE, New York, read this report, which gave the present-day opinion of authorities in experimental work with regard to foods and their effects when taken into the body, and their relation to auto-intoxication, especially having in view the prevention of arteriosclerosis and allied conditions. The report considered in this relation the physical, chemical, physiologic and pathologic conditions of food and of digestion and elimination, as well as the scientific explanation of why milk, farinaceous and other foods act differently in different conditions.

### Standardization of Therapeutic Measures

DR. W. B. SNOW, New York, reported that a survey of the year's progress in physical therapeutics marked a movement toward a more general tendency to the adaptation of rational standardization, away from irrationalism and empiricism, and discussed the various physical therapeutic measures in detail.

### Report of X-Ray Treatment of Splenomyeloid and Lymphoid Leukemia, with Blood Findings in Each

DR. J. W. TORBETT, Marlin, Texas, reported two cases, one of each variety, in order to emphasize the importance of observing Pancoast's and Stengel's precautions in treating each class of cases. In the first case, the patient died 16 days after taking the first *x*-ray treatment. It would have been better to treat the arms and legs alone as Pancoast had advised. The second patient showed some improvement under *x*-ray treatment.

### Psoriasis

DR. HERBERT MCINTOSH, Boston, reported several cases of psoriasis in which the characteristic eruptions were removed by a combination of physical methods of treatment. In his practice he had usually associated the *x*-ray with the light treatment, in a desire to hasten the cure, though the *x*-ray could probably be dispensed with. One should not fail, he said, to counsel hygienic living, proper exercise and regulation of the diet, excluding meat as being unfavorable to the progress of the cure.

### High Frequency Currents

DR. F. DEKRAFT, New York, called particular attention to the bi-polar utilization of the D'Arsonval current. This could be used in the cavities of the body; for example: for destroying papilloma of the bladder, in the nasopharynx, and also for its sterilizing effect on infected tissues, abscesses, pustular acne, etc.

### Treatment of Inflammation not Complicated or Caused by Infection

DR. W. B. SNOW, New York: The systematic proper application of the static current, in the case of a sprained knee, for instance, at the first administration softened the exudation, relieved the pressure and consequently the pain, relaxed muscular tension, and restored motility and utility to the joint. The best means for relieving local inflammations in which infection does not enter as a factor are the application of the static wave current, the static sparks, the static brush discharge or the direct vacuum tube static current, singly or conjointly. In prostatitis and seminal vesiculitis the results have been most striking, as also in dysmenorrhea and subinvolution and urethral caruncles. Neuritis, herpes zoster, intercostal neuritis, tic douloureux and Bell's palsy have been successfully treated in the same manner, as also anterior poliomyelitis, rheumatoid arthritis, traumatic arthritis and phlebitis.

### Electricity in Gout

DR. F. DEKRAFT, New York, said that treatment by drugs has been unsatisfactory, and recommended autocondensation with sufficient D'Arsonval current to produce perspiration. In his experience, the pain and stiffness in the muscles were the last to disappear under the usual mode of treatment. The use of a powerful and thoroughly concentrated resonator effleuve accomplished a most valuable purpose by reason of its deep contracting effect on the tissues and the blood vessels. As improvement took place the static brush discharge might be substituted with benefit. Concentrated light was also of benefit; diet and gentle exercise should not be neglected.

### Etiology and Treatment of Eczema

DR. H. F. PITCHER, Haverhill, Mass.: The majority of these cases are due to some metabolic or vasomotor disturbance, and the most prominent cause of that disturbance is overeating. The hygienic and dietetic treatment should be attended to; internal treatment is symptomatic. External treatment of acute eczema should be soothing and protective. The blue light should be used in the early stages, and later, the *x*-ray and the static brush discharge. The *x*-ray is the most important, and is the most valuable remedy for relief of the intense pruritus which accompanies this disease; it is the last court of appeal in many of the chronic cases, and seldom fails if properly used. In the subacute form and in the vesicular and seborrheic varieties a very low tube should be used, the treatment lasting from ten to fifteen minutes. When there is much induration the static brush discharge would hasten more rapid resolution. The effleuve from the high frequency currents or from the vacuum tubes is also beneficial in this type.

### Osteo-Arthritis of the Spine

DR. F. E. PECKAM, Providence, R. I., described this condition in detail, and emphasized the importance of finding the focus of the trouble and the cause before beginning treatment. Auto-intoxication, he said, was the cause in most such cases. In the treatment of this condition there must be produced elimination of toxic material from the tissues locally and a stimulation of the physiological processes to perform their duties in a more nearly normal manner. This might be accomplished by physiotherapeutic measures, no one modality alone usually giving so much benefit as a combination.

### Case of Splenic Leukemia Successfully Treated by Modern Methods

DR. G. W. STROBELL, Rutland, Vt., reported this case: Fowler's solution, Blaud's iron mass and blue mass were used. *x*-ray treatments were made over the spleen, alternating with chlorin cataphoresis, the treatments each day concluding with static insulation. By the end of the fourth week the patient declared that she had not felt so well for twenty years. The myelocytes were reduced from 50 to 15 per cent. and the size of the spleen was reduced two-thirds. At the end of the second month the spleen, which had been the size of a man's head, could scarcely be felt.

### Lumbago

DR. F. H. HUMPHRIS, London, England: Lumbago should be distinguished from the neurotic spine, from sacro-iliac disease, from cancer of the spine, cancer of the sacro-iliac notch, from the pain from an enlarged prostate, from the backache which ushers in dengue, influenza and other conditions of toxic origin, from Pott's disease and from sacro-iliac relaxation. The ideal treatment is to see that the bowels move freely with mercury and a saline. Sodium salicylate

and sodium of citrate of each 20 grains should be given in a glass of hot water every 4, 5, or 6 hours. The 500-candle-power light should be applied for 15 or 20 minutes, followed by the static wave current for the same length of time.

### Treatment of Chronic Metritis with Descent or Displacement

DR. G. BETTON MASSEY, Philadelphia: The form of treatment that I prefer in these cases, when not accompanied by inflammation of the adnexa is the intra-uterine employment of from 20 to 60 milliamperes positive, of the constant current, diffusing copper-mercury ions from the amalgamated electrode for 4 minutes about twice a week, each application being followed by a strongly contracting induction current from a course wire secondary.

### Treatment of Cataract by Electricity

DR. S. J. HARRIS, Boston, discussed the history of cataract, the anatomy of the lens, the different varieties of cataract, their etiology and treatment in detail. He reported a number of cases of cataract successfully treated by the direct or galvanic current, a special form of electrode being used over the eye. Mature cataracts were not suitable, he said, for this treatment, and he preferred to operate in such cases. He had had experience in a large number of incipient cases, and in many of these had been able to effect a cure. The subject was still in its infancy, but the rapid progress so far made encouraged him to continue investigation along this line.

### Oscillatory Desiccation in the Treatment of Accessible Malignant Growths and Minor Surgical Conditions

DR. W. L. CLARK, Philadelphia, read this paper, drawing the following conclusions:

A current from a static machine of large output with properly adjusted accessories is capable of producing desiccation in morbid tissue. We are able to destroy malignant growths without opening up blood or lymph channels. It is possible to get graduation of current, producing simple stimulation, desiccation or cauterization. Following an extensive surgical operation where there is suspicion of infection or malignancy this current would appear to be ideal in instantly sealing up blood and lymph channels. In cancer of the breast in which the axillary glands are involved a surgical procedure is indicated, but on the first appearance of recurrence it might be used in arresting further recurrence. It might be used in cancer of the cervix to supersede the curette and cautery as a palliative measure. Apparently we can accomplish as much in a few seconds by this method in malignant growths as by the *x*-ray in weeks or months. In disfiguring neoplastic blemishes of the skin we have a potent weapon.

### X-Ray and Light in Infections

DR. F. C. TICE, Roanoke, Va., reported a number of cases of hay-fever treated with bland oil atomization and insulated low-vacuum high-frequency tube to each nostril, with prompt cures, and also cases of acute infections treated with the light and *x*-ray.

### Report of a Noteworthy Case of Sciatica

DR. J. W. TRAVELL, New York, reported a case of sciatica of nine months duration in which during the last three months the patient received constant and thorough treatment in a hospital along the usual lines without appreciable improvement. Sedatives were given regularly at night and the patient could not sleep in bed. Treatment was begun with light, the static wave current and static sparks on the third day after leaving the hospital and all medication was stopped. The patient was able to sleep in bed after the third treatment and was entirely and permanently relieved of all pain after the seventh treatment, treatments being given daily.

### Infantile Paralysis

DR. A. W. BAER, Chicago, directed attention to the prevalence of the disease and to the many cases of deformity and paralysis which continue unrelieved in spite of all treatment commonly employed. He has found that contractions and deformity can be relieved and that the muscles will regain their tone and function even after many years by the use of the direct current applied to the spine followed by the static breeze and sparks, treatment being given three times a week for a number of weeks.

### Other Papers Read

Papers were also read by Drs. G. B. Massey, Philadelphia; F. H. Morse, Melrose, Mass.; F. H. Munroe, Newark, N. J.; A. Bassler, New York; L. G. Rabinovitch, New York, and A. W. Yale, Philadelphia.

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# *Medical Economics*

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

### United States Life Insurance Company Restores Five Dollar Rate

The United States Life Insurance Company of New York has issued a circular letter to its medical examiners, announcing that the New York law regulating life-insurance companies has been so amended as to make it possible to resume the payment of a five dollar fee for medical examinations. In November, 1906, this company reduced its examination fees, on account, it claimed, of the interpretation placed on the Armstrong Law by the Insurance Department of the State of New York. This interpretation compelled insurance companies to charge the cost of the examination against the individual policy, whereas the amendment, adopted last spring, permits them to charge the total cost of medical examinations for the year against the whole volume of business written for the year. The company therefore notifies its examiners that after September 1, the former flat rate of five dollars for insurance examinations will be re-established. It is evident that any legal reason which may heretofore have made the five dollar rate impossible is now removed and that there is no legal or economic reason why life-insurance companies can not now pay a five dollar rate for medical examinations.

### POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

#### Second Month—Third Weekly Meeting

ANEURISM

VARIETIES: True, false, dissecting, and arterio-venous.
ETIOLOGY: Syphilis, age, sex, alcohol, strain.

ANEURISM OF THE THORACIC AORTA

PATHOLOGY: Changes in aneurism of ascending portion of arch, transverse portion, descending portion of arch, descending thoracic aorta.
SYMPTOMS AND PHYSICAL SIGNS: Relation of symptoms to size and location of aneurism. Pain, cough, dyspnea, aphonia, hemorrhage, dysphagia, cardiac symptoms, pupils.
ANEURISM OF ABDOMINAL AORTA AND ITS BRANCHES: Frequency, location of sac, form. Differential diagnosis.
ANEURISM OF FEMORAL AND POPLITEAL ARTERIES: Symptoms and diagnosis of each.
ANEURISM OF CAROTID, AXILLARY AND BRACHIAL ARTERIES: Diagnosis.
ARTERIO-VENOUS ANEURISMS: Etiology, vessels involved, pathology, symptoms.

TREATMENT OF ANEURISMS

MEDICINAL TREATMENT.
TUFFNEL'S TREATMENT.
SURGICAL TREATMENT: Methods of Antyllus, Arel, Hunter, Brasdor, Matas. Compression. Gelatin treatment.

# State Boards of Registration

## COMING EXAMINATIONS

ARIZONA: Phœnix, October 3-4. Sec., Dr. Ancil Martin.

COLORADO: The Capitol, Denver, October 4. Sec., Dr. S. D. Van Meter, 1723 Tremont Place.

GEORGIA: Regular, The Capitol, Atlanta, October 11. Sec., Dr. I. H. Goss, Athens; Homeopathic, Atlanta, October 3. Sec., Dr. R. E. Hinman, 153 Whitehall Street.

IDAHO: Boise, October 4. Sec., Dr. O. J. Allen, Bellevue.

ILLINOIS: Coliseum Annex, Chicago, October 19-21. Sec., Dr. James A. Egan, Springfield.

KANSAS: Topeka, October 13. Sec., Dr. H. A. Dykes, Lebanon.

LOUISIANA: New Orleans, October 18-19. Sec., Dr. A. B. Brown, 108 Baronne Street.

MICHIGAN: Lansing, October 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: State University, Minneapolis, October 4-6. Sec., Dr. W. S. Fullerton, St. Paul.

MISSISSIPPI: Jackson, October 11-12. Sec., Dr. S. H. McLean.

MONTANA: The Capitol, Helena, October 4. Sec., Dr. William C. Riddell.

NEW JERSEY: State House, Trenton, October 18. Sec., Dr. H. G. Norton.

NEW MEXICO: Santa Fe, October 10-11. Sec., Dr. J. A. Massie.

NORTH DAKOTA: Grand Forks, October 4-6. Sec., Dr. H. M. Wheeler.

OKLAHOMA: Muskogee, October 11. Sec., Dr. Frank P. Davis, Enid.

RHODE ISLAND: State House, Providence, October 6. Sec., Dr. Gardner T. Swarts.

UTAH: City and County Bldg., Salt Lake City, October 3-4. Sec. Dr. G. F. Harding, 310 Templeton Bldg.

WYOMING: State Capitol, Cheyenne, October 12-14. Sec., Dr. S. B. Miller, Laramie.

### Iowa June Reports

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examinations held at Des Moines, June 6-8, and at Iowa City, June 9-11, 1910. The number of subjects examined in was 8; total number of questions asked, 100; percentage required to pass, 75.

At the examination held at Des Moines the total number of candidates examined was 43, of whom 41 passed and 2 failed. The following colleges were represented:

| College. | Year Grad. | Per Cent. |
|---|---|---|
| **PASSED** | | |
| College of Medicine and Surgery, Chicago | (1909) | 83 |
| College of Physicians and Surgeons, Chicago | (1910) | 89 |
| Hering Medical College | (1910) | 81 |
| Hahnemann Med. Coll. and Hospital, Chicago | (1910) | 83, 85 |
| Sioux City College of Medicine | (1909) | 79 |
| Drake University (1908) 79; (1910) 83, 84, 84, 84, 85, 85, 86, 87, 87, 88, 89, 89, 90, 90, 90, 91, 91, 91, 91, 91, 92, 92 | | |
| Barnes Medical College | (1910) | 77, 79 |
| University Medical College, Kansas City | (1910) | 83, 84, 84 |
| Ensworth Medical College | (1910) | 87, 87 |
| St. Louis College of Physicians and Surgeons | (1910) | 79 |
| Western Reserve University | (1908) | 92 |
| Jefferson Medical College | (1909) | 85 |
| University of Pennsylvania | (1902) | 91 |
| Queen's University, Canada | (1906) | 89 |
| **FAILED** | | |
| Ensworth Medical College | (1910) | 73 |
| University Medical College, Kansas City | (1910) | 69 |

At the examination held at Iowa City, the total number of candidates examined was 61, all of whom passed. The following colleges were represented:

| College. | Year Grad. | Per Cent. |
|---|---|---|
| **PASSED** | | |
| State University of Iowa, College of Medicine (1910) 80, 80, 84, 84, 84, 84, 84, 84, 85, 85, 85, 85, 85, 85, 86, 86, 86, 86, 86, 86, 86, 86, 87, 87, 84, 87, 87, 87, 87, 87, 87, 88, 88, 88, 88, 88, 88, 89, 89, 90, 90, 90, 90, 90, 90, 90, 91, 91, 91 | | |
| State University of Iowa, College of Homeopathic Medicine (1910) 81, 84, 84, 85, 86, 87, 91, 91, 93. | | |
| Jefferson Medical College | (1910) | 87, 87, 92 |

**LICENSED THROUGH RECIPROCITY**

| College | Year Grad. | Reciprocity with |
|---|---|---|
| Northwestern University Medical School | (1909) | Illinois |
| Rush Medical College | (1909) | Missouri |
| Hering Medical College, Chicago | (1908) | Illinois |
| College of Physicians and Surgeons, Chicago | (1909) | Illinois |
| Fort Wayne College of Medicine | (1881) | Indiana |
| College of Physicians and Surgeons, Keokuk | (1893) | Missouri |
| University Medical College, Kansas City | (1908) | Kansas |
| Barnes Medical College | (1909) | Kansas |
| St. Louis University | (2, 1909) | Illinois |
| Marion-Sims Beaumont College of Medicine | (1902) | Missouri |
| University of Nebraska | (1909) | Nebraska |
| University of Buffalo | (1910) | Nebraska |
| Cornell University Medical College | (1904) | Minnesota |

### Maine July Report

Dr. Frank W. Searle, secretary of the Maine Board of Registration of Medicine, reports the written examination held at Augusta, July 19-20, 1910. The number of subjects examined in was 10; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 56, of whom 55 passed and 1 failed. The following colleges were represented:

| College. | Year Grad. | Per Cent. |
|---|---|---|
| **PASSED** | | |
| Medical School of Maine (1910) 76.6, 77.3, 79, 79, 82, 83, 84, 84, 84, 85, 85, 86, 86, 87, 87, 87, 87.1, 88, 90. | | |
| Maryland Medical College | (1910) | 76, 77 |
| Baltimore Medical College | (1910) | 87 |
| Tufts College Medical School (1909) 85.7; (1910) 83, 84, 84.9, 86, 88. | | |
| College of Phys. and Surg., Boston | (1908) 75.9; (1910) | 79, 88 |
| Harvard Med. School (1903) 87; (1909) 85; (1910) 85, 86, 87, 93 | | |
| Boston University | (1906) 88; (1910) | 83, 87 |
| Dartmouth Medical School | (1909) | 87.5 |
| Cornell University Medical College | (1908) | 93 |
| Columbia University, College of Phys. and Surg. (1883) 81; (1892) 88; (1900) 90. | | |
| Hahnemann Med. Coll. and Hosp., Philadelphia | (1910) | 90 |
| University of Pennsylvania | (1909) 86; (1910) 93, 94, 94 | |
| McGill University, Quebec | (1910) | 86, 89 |
| University of Bishop College, Montreal | (1905) | 78 |
| Laval University, Canada | (1905) 76; (1908) | 82 |
| **FAILED** | | |
| Hahnemann Med. Coll. and Hosp., Philadelphia | (1910) | 71.4 |

# Book Notices

A SYSTEM OF OPERATIVE SURGERY. By Various Authors. Edited by F. F. Burghard, M.S., Teacher of Operative Surgery in King's College, London. In Four Volumes. Vol. III. Cloth. Price, $10. Pp. 764, with 381 illustrations. New York: Oxford University Press, 1909.

This volume keeps up the high standard set by the two which precede it. The first chapter, dealing with operations for the removal of tuberculous cervical nodes, gives plain indications for the treatment of these and outlines in a lucid way the knowledge of anatomy required in doing a radical operation for glands of the neck. Mr. Stiles has written this chapter largely from his own experiences and consequently only those procedures which have been found most valuable by him are included.

The chapter dealing with goiter is good, but does not add much to our present knowledge. The author states that he has seen marked benefit follow ligature of both superior arteries and one inferior artery in a very bad case of exophthalmic goiter, but that he considers it to be a dangerous proceeding, and is of the opinion that in acute cases it should never be employed. Ligation of the superior poles, including all the structures connected with them, has been employed so extensively and with such good results in mild and severe cases that such a sweeping condemnation is surprising. Although ligation of the arteries alone may not be followed by such good results as ligation of the poles it has been the experience of many that the ligation of arteries alone has prepared an extremely sick patient for a more radical procedure and has benefited mild cases. The lines of incision and the operative technic concerned in the removal of the thyroid are clearly discussed. The chapter dealing with the surgery of the bile tract is one of the best that has been presented upon this subject. It is based entirely on the experiences of Mayo Robson and the indications to be met in treating lesions of the bile passages are as clearly set forth as is possible in a text-book of this character. The chapter on prostatectomy by Mr. Freyer is largely based on his own experience and is therefore valuable. This work will take front rank as a reference book of operative surgery.

DISEASES OF INFANCY AND CHILDHOOD: THEIR DIETETIC, HYGIENIC AND MEDICAL TREATMENT. A Text-Book Designed for Practitioners and Students in Medicine. By Louis Fischer, M.D., Attending Physician to the Willard Parker and Riverside Hospitals of New York City. Third Edition. Cloth. Price, $6.50 net. Pp. 980, with 303 illustrations. Philadelphia. F. A. Davis Company, 1910.

This is a revised edition, containing considerable new material. The chapter on cerebrospinal meningitis is especially good. The technic of the diagnostic and therapeutic punctures is explained thoroughly and the intraventricular method of injecting serum is shown clearly by an excellent plate. Two

new colored plates, illustrating the von Pirquet reaction have been added. They show not only the normal reaction of a tuberculous subject, but also the degree of reaction to tuberculin in various dilutions.

The hemostatic value of injections of horse-serum in hemophilia and postoperative tonsillectomy is described. The chapter on diphtheria and intubation covers 83 pages. It is exhaustive and well illustrated with charts and plates. Some of the latest ideas on lordotic, or orthostatic, albuminuria are presented and new articles on scabies, acetonuria, indicanuria, pyuria, and diabetes have been added. The book would be improved if the treatment of diabetes were discussed more fully. The dietetic management which is so important in this disease should certainly be considered more at length. The chapters on urinalysis and bacteriologic technic could be omitted from a work of this kind inasmuch as there are so many good books dealing with these subjects. To the various methods of infant-feeding described in the previous editions the caloric method has been added. The author illustrates his method of feeding by cases from his own practice.

The work is well written and is on the whole up to date and valuable to both the student and the general practitioner.

DAS KYSTOSKOP. Eine Studie seiner optischen und mechanischen Einrichtung und seiner Geschichte. Lehrbuch für Aerzte und Studierende. Von Dr. Otto Ringleb, Spezialarzt für Urologie in Berlin. Paper. Price, 7.50 marks. Pp. 194, with 98 illustrations. Leipsic: Dr. Werner Klinkhardt, 1910.

This work is divided into three parts, the theoretical, the practical, and the historical. In the theoretical part the author thoroughly considers the basic principles of light reflection and refraction. He makes free use of excellent diagrams and mathematical formulas to illustrate all points. Perspective is thoroughly discussed. In the second or practical part, the author discusses briefly a few anatomic points in regard to the urethra and bladder and then in elaborate detail describes the construction of the modern cystoscope, including the lamp, the insulation, the shaft of the instrument, the position and method of operation of the prisms.

The various types of cystoscopes, as the children's cystoscope, the retrograde and the different types of catheterizing and operating instruments, are all shown. In the third or historical chapter the evolution of the cystoscope is traced from the original endoscope of Desormeaux to the modern instruments. The photographic cystoscope of Nitze and the demonstration apparatus of Kutner are mentioned in the historical part. This is not a book that will interest the general practitioner at all, but for the cystoscopist it is one of great interest.

PHYSIOLOGY AND PATHOLOGY OF THE SEMICIRCULAR CANALS. Being an Excerpt of the Clinical Studies of Dr. Robert Barany with Notes and Addenda Gathered from the Vienna Clinics. By Adolph E. Ibershoff, M.D. An a Foreword by Royal S. Copeland, M.D. Cloth. Price, $1 net. Pp. 64, with illustrations. New York: Paul B. Hoeber, 69 E. 59th St., 1910.

This book brings the teachings of the younger Vienna school of otologists, especially of Dr. Barany, closer to the English-speaking part of the profession. No otologist can afford to ignore these teachings. Notwithstanding the shortness of the book, almost 7 pages are devoted to subjects foreign to its title, namely "Indications for Labyrinthine Operation in Acute Diffuse, Latent Diffuse and Circumscribed Labyrinthine Suppuration." The radical standpoint exposed there is not warranted by facts and not shared by the profession. On page 9, the author says, "The right anterior vertical (semicircular canal) and the left posterior vertical lie in the same plane." They lie in parallel planes. The writer of the preface deems it necessary to draw attention to the writer of the book: "The profession is to be congratulated that so finished a scholar, and so able a physician and surgeon as"....

DIE UNTERSUCHUNG UND BEURTEILUNG DES WASSERS UND DES ABWASSERS. Ein Leitfaden für die Praxis und zum Gebrauch im Laboratorium. Von Dr. W. Ohlmüller, Verwaltungsdirektor des Virchow-Krankenhauses, und Dr. O. Spitta, Privatdozent der Hygiene an der Universität. Third Edition. Paper. Price, 12 marks. Pp. 422, with illustrations. Berlin: Julius Springer, 1910.

The responsible work of sanitary engineers and chemists in looking after municipal water supplies calls for constant experimenting and research in meeting problems and new conditions. For such work this volume is an authoritative handbook, giving complete methods for the examination and control of water supplies. A great many methods of examination are given, including the results of most recent researches in sanitary chemistry. The results obtained by the methods given are discussed and their sanitary significance explained, presenting a very complete guide for the exhaustive and exacting control of water supplies. The volume is supplemented by a full list of references to allied literature and is well indexed.

HANDBOOK OF ELECTROTHERAPEUTICS. By William James Dugan, M.D., Lecturer on Electrotherapeutics at Jefferson Medical College, Philadelphia. Cloth. Price, $2 net. Pp. 242, with 91 illustrations. Philadelphia: F. A. Davis Company, 1910.

The author has undertaken to produce a simple and concise handbook of electrotherapeutics, and he has succeeded well in that hard task. The book is without the elaboration of detail that confuses the elementary student, but it is full enough to be a satisfactory guide. The usual topics of electrotherapeutics are covered. The author's position in regard to the therapeutic uses of electricity is temperate and judicious. One historical matter which has received scant justice in the past is given attention by the author in crediting to Dr. William J. Morton the discovery and therapeutic application of high-frequency currents. On the whole the book is worthy of recommendation. It is marred by the large numbers of illustrations of proprietary apparatus—particularly of one manufacture—so that it suggests a commercial catalogue.

THE AFTER-TREATMENT OF OPERATIONS. A Manual for Practitioners and House Surgeons. By P. Lockhart Mummery, F.R.C.S., Senior Assistant Surgeon, St. Mark's Hospital for Fistula and other Diseases of the Rectum, and to the Queen's Hospital for Children. London. Third Edition. Cloth. Pp. 251, with 38 illustrations. Price, $2.25 net. New York: William Wood & Co., 1909.

The distinction of being the first printed text on this subject probably belongs to this book, and none of the good features which marked the first edition has been omitted. The book has been thoroughly revised, especially the chapters on abdominal surgery, to which has been appended an excellent discussion of the treatment of general acute peritonitis in which the author favors the continuous saline rectal irrigation and witholding food by mouth for the first few days. The chapters on genito-urinary surgery and rectal operations have been added to materially and a new chapter on the serum and vaccine treatment of sepsis is an excellent review of present-day knowledge on this subject.

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## *Medicolegal*

### Railroad Relief Department Contract and Liability

The Supreme Court of South Carolina had for the first time, in the case of Barden vs. Atlantic Coast Line Railway Co. (67 S. E. R. 971), the question of the validity of a regulation or contract of a relief department of a railroad company providing that the acceptance by a member of benefits for injury shall operate as a release and satisfaction of all claims against the company for damages arising from such injury, and, in the event of the death of a member, no part of the death benefit shall be due or payable until releases of all claims against the relief department and company have been executed by all who might legally assert such claims, while if any suit shall be brought against the company for damages arising from the injury or death of a member the benefits otherwise payable and all obligations of the relief department and of the company, created by the membership of such member in the relief fund, shall be forfeited.

The authorities agree, without dissent, the court says, that all contracts made by railroad companies to avoid liability for their own negligence, are void. If an employee is injured by negligence, why should he be required to stipulate in advance that he must choose between a forfeiture on the

one hand, of all benefits which accrue to him under the rules and regulations of the department to which he has contributed each month, and, on the other hand, his right of action, of which he cannot be deprived by any agreement, express or implied? Is not all the benefit to the company? This choice of remedies is to be made only by those employees whose injuries or death are caused by the negligence of the company. On no other contingency is the employee forced to choose. Further, those who are injured or killed by negligence can receive no benefit "unless and until" a complete release of the action for damages is properly executed. Such is the compulsion of the stipulation; such is the "letter of the bond." The election of remedies originates in and is predicated on this stipulation. In the court's opinion, this stipulation is an ingenious scheme devised by the company to avoid responsibility for its negligence, and, as such, is inequitable and void.

Eliminating this regulation and stipulation as void, there was a relief department or association, supported by the mutual contributions of employee and employer, maintained for the sole purpose of relieving and mitigating the suffering of its members—a charity whose noble purposes were untainted by selfish interest. With its character thus defined, the law is well settled that the only duty imposed on the railroad company is the duty to exercise reasonable care in the selection of the physicians and surgeons who are reasonably competent, and, having exercised this duty, the company is not chargeable with the want of skill of the physician or surgeon whom it has selected, in the performance of the service he is required to render.

### Inadmissibility of Farmer-Plaintiff's and Other Testimony to Reputation of Physicians—Limiting Examination of Party to One Physician

The Court of Civil Appeals of Texas says, in International & Great Northern Railroad Co. vs. Lane (127 S. W. R. 1066), a personal injury case brought by the latter party, a farmer, that he was permitted, while on the stand as a witness, to testify as to the standing of two physicians in another county, who had testified as to the character of his wound and had given opinions as experts as to the permanency of his injuries. The reputation of the two physicians, professionally or otherwise, had not been questioned by any evidence admitted on the trial, and, under such circumstances, the evidence was clearly inadmissible. The mere fact of the physicians being non-residents, in the absence of any attack on their competency, could not justify the introduction in evidence of the opinion of the plaintiff as to their standing in the community in which they lived.

The rule has been stated to be that, after a witness has been adjudged competent as an expert by the court, which is done when his testimony is admitted, his reputation can be sustained only after it has been impeached. In some instances it has been held that, where a physician's skill had been attacked, evidence of reputation was not admissible for or against him. The court need not go so far in this case, but simply hold that, in the absence of any attack on the skill or reputation of a medical witness, testimony as to his reputation as a physician would not be admissible. Especially does it seem objectionable to permit evidence, under such a state of facts, by a plaintiff, a farmer, not skilled in medicine, in regard to the reputation of his own witnesses. The error in the admission of the testimony was not cured by the fact that no other medical witness testified as to the condition of the wounds at the time they were examined by the medical witnesses for the plaintiff. The evidence as to the reputation of the witnesses had a tendency to give undue importance to their testimony, and may have had an influence with the jury.

One physician, offered by the defendant, was allowed to examine the plaintiff's arm, and it had no ground to object because other physicians offered by it were not permitted to examine the arm, although the plaintiff had exhibited the arm to the jury, the physician being a reputable one, whose testimony was not attacked in any way, while the defendant gave no reason for wanting more than one physician to examine the arm, and did not attempt to show that it was injured by the examination being confined to one physician.

### Charitable Hospital Not Liable From Pay Funds For Negligence of Nurse

The Supreme Court of Pennsylvania says that the case of Gable vs. Sisters of St. Francis (75 Atl. R. 1087) was brought to recover damages for the scalding with hot water of a young woman on whom an operation had just been performed and who was still unconscious and helpless, the water having escaped from a hot-water bottle placed beside her by a nurse. But it is a doctrine too well established to be shaken, and as unequivocally declared in Pennsylvania as in any other state, that a public charity cannot be made liable for the tort (wrongful act) of its servants. The doctrine rests fundamentally on the fact that such liability, if allowed, would lead inevitably to a diversion of the trust funds from the trust's purposes. The fact that a hospital receives pay for a certain class of patients detracts nothing from its character as a purely charitable institution. It was wholly immaterial that the plaintiff who here complained of injury was admitted as a pay patient. It was insisted, however, that the reason for the rule did not obtain in this particular case, since she had filed a paper in the court below disclaiming any right of execution against any fund of the defendant corporation held for charitable uses and all income of said corporation other than that received from pay patients; and had asked that the verdict be paid out of funds derived from pay patients only. The argument overlooked the fact that every dollar received by the hospital, from whatever source, was stamped with the impress of charity. For what did the plaintiff pay? For accommodations which the hospital was enabled to provide through the use of money charitably donated to it. The room, the bed, the furnishings and conveniences for which the plaintiff paid were all of them the direct and immediate product of the voluntary donations it received. It followed that the money that the hospital received from its pay patients was as strictly the increment of the charitable donations it had received as would be the interest on the money given it if invested on loan. If any profit resulted from this source it could only be regarded as an incidental addition to the trust fund or income.

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## *Current Medical Literature*

### AMERICAN

Titles marked with an asterisk (*) are abstracted below.

#### The Boston Medical and Surgical Journal

*September 15*

1 *Present Status of the Treatment of Exophthalmic Goiter. J. M. Jackson and T. J. Eastman, Boston.
2 *Surgical Treatment of Exophthalmic Goiter. C. A. Porter, Boston.
3 Distortion of the Face and Skull Due to Continued Fixed Posture in Early Infancy. J. E. Goldthwait, Boston.

**1. Present Status of Treatment of Exophthalmic Goiter.**—Jackson and Eastman are of the firm belief that in practically every case it is our duty to treat the patient medically for three months. If at the end of that time no improvement has taken place, preferably ligate the vessels. This may effect a cure. If it does not, and the patient later comes to the operation of partial thyroidectomy—which is as yet the most satisfactory of the radical operations—the ligation will make the operation easier and less dangerous. If the goiter is very large, it is well to remove only the larger lobe and then treat the remaining lobe with the *x*-ray and medical procedures. Patients who show beginning cardiac failure should be operated on as soon as possible after being put in fair condition by medical treatment. Many cases, however, come to the doctor only after the myocardial changes have begun. Patients in this condition must be treated as cases of advanced myocarditis, for all treatment beneficial to this condition is also beneficial to the exophthalmic goiter. The strictest rest, with ice bags

over the heart and thyroid, a carefully regulated diet, the hydrobromid of quinin, and, if necessary, the cautious use of strychnin and bromids is the treatment to be carried out. We must not expect an absolute cure in the cases in which the myocarditis is advanced, though symptomatic recovery does sometimes occur, and we can hope only to lessen the symptoms and make life better worth living for the patient and the patient's family. In the earlier cases we may be able to effect a cure, and if not we may, by careful medical treatment, improve the condition to such an extent that the patient can be operated on with much less danger than before treatment.

2. **Surgical Treatment of Exophthalmic Goiter.**—Porter agrees with other surgeons that surgery, in properly selected cases, offers more and quicker improvements than medical treatment. To be successful, earlier operation must become the rule before incurable degenerations have developed. When reasonable medical treatment has been carried out the surgeon should be consulted. While from the very nature of the disease permanent cures may not be common, permanent improvements follow timely and appropriate operation in the large majority of cases after medical treatment has proved unavailing.

### Medical Record, New York

*September 17*

4 Psychologic Study of Gangs. S. Block, Brooklyn, N. Y.
5 Method of Simple Extraction of the Lens. F. Valk, New York.
6 Suppurative Adenitis Under the Sternocleidomastoid Muscle Treated with Streptococcus Vaccine. F. Op. de Beeck, New York.
7 Ainhum Complicating *Uncinariasis Americana* in an American White Girl. F. L. Eskridge, Atlanta, Ga.
8 An Improved Pharyngoscope. A. L. Beck, Mamaroneck, N. Y.
9 Deaths in Childbirth. F. S. Crum, Newark, N. J.

### New York Medical Journal

*September 17*

10 Surgical Importance of the Omentum. L. J. Hammond, Philadelphia.
11 *Duodenal Regurgitation due to Fatty Foods and Oils as a Clinical Entity. Fat Intolerance of Gastric Origin. A. Bassler, New York.
12 Heredity. H. M. Lee, New London, Conn.
13 The Syphilitic and Tuberculous Patient. G. B. Sweeney, Pittsburg.
14 A Few Prevalent Eye Diseases. G. W. Vandergrift, New York.
15 *Acute Intestinal Obstruction Caused by a Foreign Body in the Peritoneal Cavity. H. Roth, New York.
16 Important Physical Signs in the Diagnosis of Incipient Pulmonary Tuberculosis. P. H. Ringer, Asheville, N. C.
17 Aconite. J. Knott, Dublin, Ireland.

11. **Duodenal Regurgitation.**—Bassler directs attention to a stomach condition in which clinically the oils or fat foods, such as olive oil, milk, cream, butter and eggs, seem to be indicated, but in which they do harm and perpetuate the condition. During the past winter he has seen four individuals, all men of middle age, who were definite instances of this, each of whom had been in the hands of competent practitioners without benefit, and each of whom made substantial recoveries when the fat had been stopped and he was placed on a fat-free diet (skimmed milk, white of eggs, carbohydrates, green vegetables, boiled meats, etc.). These cases occurred in individuals who gave a history of having had no stomach disorder up to the onset of acute symptoms. The subjective symptoms were those of sharp pain in the epigastrium, radiating to the back, which persisted for from several minutes to several hours, and sometimes over one or two at a time. In each instance these pains were described as most severe, irregular in duration, quite incapacitating the patient for the time being and then suddenly ceasing, at which the individual was as well as ever. There was no distinction in any of them as to when this spasmodic pain would begin or cease, and it was independent of meals or the ingestion of foods of different character or quantities. One of them said that nausea was present at the time that the pain was severe, but none had vomiting at any time during the illness. Other than the seizures of pain, which came on acutely in the first attack, there was nothing particular in the history of any of them.

15. **Foreign Body in Peritoneal Cavity.**—This patient, a woman, had three distinct attacks of abdominal cramps and vomiting before Roth saw her. On opening the peritoneum a considerable quantity of clear serum escaped. Digital exploration revealed a cord-like structure running from the right side toward the median line and downward, and attached to a mass of adherent intestine which it constricted. On separating this cord-like structure, which proved to be omentum, and withdrawing it from the abdomen, a foreign substance, about two and a half inches long and about one-quarter inch wide, was brought out with it. On examination this foreign body proved to be a pledget of absorbent cotton discolored by blood. Further examination revealed two loops of the ileum adherent at the mesenteric borders. The adhesions were broad and firm and required ligation before division. In the midst of these adhesions some more cotton was found and removed. After repairing the denuded surfaces the cord of omentum was examined and in its lowest portion, the one which was attached to the mesentery, another piece of cotton was found firmly embedded.

Knowing that the patient has never had an abdominal section, suspicion pointed to the uterus as the most probable organ which might have been perforated during an induced abortion. The pelvic organs were therefore carefully examined, but, with the exception of a small indurated area in the lower part of the posterior wall of the uterus—perhaps at the level of the internal os—there was nothing noteworthy. Later the patient confessed to having had several abortions induced, the first in 1906, and the last about March 28, 1908, when about two months pregnant, or about six weeks before the onset of the present illness.

### Bulletin of the Manila Medical Society

*July*

18 Importance of the Profession of Nursing. D. C. Worcester, Manila.
19 Is Cholera Endemic in the Philippines? A. J. McLaughlin, Manila.
20 Diphtheria in the Philippines. W. P. Chamberlain, U. S. Army.
21 Diphtheria on the Isthmus of Panama. T. C. Lyster, U. S. Army.
22 Vincent's Angina. H. D. Bloombergh, U. S. Army.
23 Pharyngeal Syphilis, Especially the Diagnosis. K. Nelson, U. S. Army.

### Texas State Journal of Medicine, Fort Worth

*September*

24 *Pathologic Conditions of the Stomach as Determined by Analysis of the Gastric Contents. A. Wolbarst, Tyler.
25 Labyrinthitis. E. R. Carpenter, El Paso.
26 Operative Procedure in Closing Fecal Fistula. R. W. Knox, Houston.
27 Two Cases of Pellagra. J. B. Thomas, Midland.

24. **Pathologic Conditions of the Stomach.**—While laboratory examinations are important in the diagnosis and treatment of gastric disturbances, in Woldert's opinion no examination of the gastric contents would be complete nor would the patient who comes for relief receive that degree of care and consideration which he naturally expects and deserves unless the physician in making such gastric analysis goes deeply into the history of the case before pronouncing his diagnosis and resorting to treatment.

### California State Journal of Medicine, San Francisco

*September*

29 Medical Expert Testimony. O. C. Mueller, Los Angeles.
30 The Carnegie Report. A. A. D'Ancona, San Francisco
31 A Protest from Cooper Medical College. H. Gibson, Jr.
32 The Problem of Pre-Medical Education. T. W. Huntington, San Francisco.
33 Notes on Nitrous Oxid and Oxygen for Prolonged Anesthesia and Report of a Few Critical Cases. E. H. Williams, San Francisco.
34 Two Cases of Tumor in the Fourth Ventricle and Cerebellum. L. Newmark and M. B. Lennon, San Francisco.
35 Tropical Medicine. C. Wellman, Oakland.
36 Case Reports. H. C. Moffitt, San Francisco.
37 Case of Poisoning by Subnitrate of Bismuth. G. B. Somers, San Francisco.
38 *Unusual Case of Strangulated Hernia. R. B. Dempsey, Vallejo.

38. **Unusual Case of Strangulated Hernia.**—The patient complained of intense pain in the left inguinal region and an examination by Dempsey revealed a large mass, very tender to touch, indurated and inflamed. Constipation was absolute, not even flatus passing, abdomen was much distended, face hippocratic, pulse small and tension low, subnormal temperature and moist skin; in fact, many of the symptoms of shock. A hernia had been cured some years ago by injections of a clear substance in solution, probably

zinc chlorid, into region of both rings and at various other places in the inguinal region. It was plain that the man had strangulated hernia, and as taxis failed to reduce it, Dempsey arranged to operate. The regular Bassini incision was made through the skin, revealing a sausage-shaped tumor composed of the pampiniform plexus, vas deferens, a loop of intestine, and the hernial sac, all matted together by dense fibrous adhesions and grown solidly to the pillars of the internal ring. Within the abdominal cavity were numerous adhesions binding the intestines into a mass and firmly adherent to the peritoneum.

The intense inflammation produced by the injections had caused the entire disappearance of the muscular fibers of the external oblique for some distance from the canal, leaving in its place a fibrous membrane, probably the sheath of the muscle, so thin as to be transparent, and loosely adherent to the skin, the fatty layer having disappeared as had the muscular fibers. The conjoined tendon of internal oblique and transversalis had numerous areas of heavy scar tissue distributed throughout its substance, and the only structure not affected was Poupart's ligament. The cord was composed of the vas deferens, with remains of numerous veins and arteries, all occluded and imbedded in a mass of fibrous tissue about three inches long and two inches thick and within the mass was a knuckle of compressed intestine, causing the obstruction.

Little was done but to dig out and separate the knuckle of intestine, remove some of the veins of the cord and return that structure to the abdomen, suturing the remains of the conjoined tendon of internal oblique and transversalis over the cord, as in Fowler's operation, there being not sufficient left to form a floor for a new canal. The remains of the aponeurosis of the external oblique were sutured to Poupart's ligament and the skin closed with a subcuticular stitch. The history of the following month was that of an ordinary hernia. At present the abdominal wall is firm, and the hernia will probably not recur, as the intestines are firmly adherent to the abdominal wall and can not descend.

### The Journal of the South Carolina Medical Association, Charleston

*August*

39 *Present Status of Cancer Education. S. Leigh, Norfolk, Va.
40 Infantile Scurvy. A. W. Browning, Elloree.
41 *Treatment of Diseased Tonsils. C. W. Kollock, Charleston.
42 *The Diseased Tonsil. J. W. Jervey, Greenville.
43 Diagnosis of Fractures of Vault and Base of Skull and the Indications for and Technic of Operative Treatment. C. F. Ross, Anderson.
44 *Case of Appendicostomy by a Method Devised by Dr. Pettijohn, of the U. S. Public Health and Marine-Hospital Service. F. A. Griffith, Columbia.

39, 40, 44. Abstracted in THE JOURNAL, May 28, 1910, pp. 1815, 1816.

42. Abstracted in THE JOURNAL, May 14, 1910, p. 1599.

### Washington Medical Annals

*September*

45 The So-Called Automobile Fracture. C. S. White, Washington.
46 Removal of the Upper Extremity for Sarcoma. W. A. Jack, Jr., Washington.
47 *Case of an Acute, Febrile and Probably Infectious Disease of Unknown Origin. L. L. Lumsden, Washington.
48 Recent Progress in Pharmacologic Therapeutics. W. M. Barton, Washington.
49 Scarlet Fever. M. F. Thompson, Washington.
50 Volvulus; Resection by Aseptic Basting-Stitch Method. H. H. Kerr, Washington.
51 Tumors of the Long Bones. W. F. M. Sowers, Washington.

47. **Acute, Febrile and Probably Infectious Disease of Unknown Origin.**—This was a case of fever which after a period of slight prodromes for three or four days, had an abrupt onset, the temperature rising rapidly and reaching a point between 103 and 104 F. within two or three days, remaining steadily at about this point for about ten days or more, and then falling, either by crisis or by rapid lysis, and defervescence had begun. The patient's convalescence was uncomplicated, rapid and satisfactory. Among the other and somewhat striking features of the case were a rather severe bronchitis, which persisted as long as the fever continued; a very severe headache, not in any particular part of the head, which continued until defervescence; marked congestion of the conjunctivæ, and rather obstinate constipation, enemata being required to secure a movement of the bowels. There was slight nose-bleed on one or two occasions while the fever was high. There was no labial herpes; no retraction of the head; very slight, if any, stiffness of the neck; no convulsions. Kernig's sign was not present on June 25. The patient showed considerable restlessness while the fever was at its height, and was at times delirious. The results of the laboratory test certainly constitute a strong point in the evidence against the case having been either typhoid or paratyphoid fever. Lumsden is of the opinion that the case was very probably of the same nature as the cases of which M. E. Brill made such an admirable study in New York. [Brill's paper was published in the *American Journal of the Medical Sciences*, April, 1910, and was abstracted in THE JOURNAL, April 30, 1910, p. 1477.]

### Kentucky Medical Journal, Bowling Green

*September 1*

52 Hernia of the Bladder. C. B. Spalding, Louisville.
53 Practice of Medicine from a Business Point of View. J. Trawick, Louisville.
54 Pyelitis in Pregnancy and the Puerperium. H. E. Tuley, Louisville.

### Journal of Delaware State Medical Society, Wilmington

*September*

55 *Transactions of 120th Annual Meeting of Delaware State Medical Society.

55. This number is devoted exclusively to the proceedings of the Delaware State Medical Society.

### Illinois Medical Journal, Chicago

*September*

56 *Effects of Gall-Bladder Infection on the Gastro-Intestinal Tract. F. Billings, Chicago.
57 Gall-Stone Disease and Its Relation to Intestinal Obstruction. J. B. Murphy, Chicago.
58 *Surgery in Cholelithiasis. E. Ries, Chicago.
59 Gall-Tract Infection. J. E. Coleman, Canton.
60 Acute Perforating Gastric Ulcer Requiring Gastrojejunostomy as a Secondary Operation—Recovery. J. E. Allaben, Rockford.
61 Tumors of the Tongue, Benign and Malignant. E. Friend, Chicago.
62 *The Influence of Heredity in Tuberculosis. H. J. Achard, Chicago.
63 Tuberculosis of the Ear, Throat and Nose. A. E. Prince and W. G. Bain, Springfield.
64 Treatment of Rectal Fistula. J. R. Pennington, Chicago.
65 Hysterectomy as a Conservative Procedure. H. Crutcher, Roswell, N. M.

56. **Gall-Bladder Infections.**—Billings has made an analysis of the conditions of 60 patients suffering from cholelithiasis to ascertain the secretions and motility of the stomach in this class of patients. These 60 patients were selected out of 335 patients, because in these 60 there were made careful observations of the digestive power of the stomach. Of these 60 patients, 50 suffered from cholelithiasis with cholecystitis and 10 suffered from cholecystitis with cholelithiasis of the gall-bladder and the common duct. The majority of these patients presented practically normal gastric juice. In a few instances the total acidity was high. In one, 122; in two, 112; in one, 116. In a few the total acidity was low, practically an anacidity, with no more total acidity than would be expressed by the acid phosphates of a test meal. Of these one showed a total acidity of 9 and two of 10. All of the remainder showed an acidity within normal limits. Hyperchlorhydria as represented by a large amount of free hydrochloric acid occurred in only a few. The record shows free hydrochloric acid in one of 70; another 78, and two 88.

Motility was disturbed in 45 of the 60 patients during acute exacerbations of the disease as shown by vomiting. A study of the motility of the stomach during intervals between paroxysms showed that there was practically never an anatomic insufficiency of the gastric muscle. The fasting stomach of the morning showed the presence of gastric juice without microscopic food remnants. In the 2 patients a seven-hour motor meal showed the presence of gastric juice of rather a high acidity with a few food remnants. The remainder of the patients showed an entirely empty stomach with a seven-hour motor meal. The stools of these 60 patients, with 2 exceptions, showed an absence of chemical blood. The analyses of the stomach condition of these 60

patients would seem to indicate that the digestive power of the stomach was not disturbed by cholecystitis, excepting in the acute attack or in exacerbations of the chronic disease. During the acute attack or the exacerbation the disturbance was due to the pain and was manifested by nausea, vomiting and usually anorexia.

58. **Surgery in Cholelithiasis.**—The technical part of the surgery of cholelithiasis, Ries says, has reached a very high and satisfactory stage of development. The limitations of surgical success are few and these are due more to pathologic conditions preceding the operation than to any shortcomings of the art of surgery.

62. **Heredity in Tuberculosis.**—Achard believes that tuberculosis as a disease is never inherited. A general and a specific predisposition (hypersusceptibility) may be transmitted; whether an actual tuberculosis develops on this foundation depends on exposure to infection. The transmitted predisposition is probably modified by a degree of specific resistance, which may likewise be transmitted. Congenital tuberculosis is exceedingly rare and, therefore, can not be admitted as the principal cause of phthisis in adolescence or adult life. Congenital tuberculosis is not a hereditary disease but it is due to intra-uterine infection by way of the placenta. It is only possible when the placenta is pathologically altered. Congenital tuberculosis is observed only in the infants of women with far-advanced phthisis, the mothers in all cases on record having died soon after delivery. Infants with congenital tuberculosis succumb always to the disease in the first weeks or at most months of extra-uterine life.

### American Journal of Urology, New York

*August*

66 Treatment of Chronic Prostatitis. W. C. Bryant, Pittsburg.
67 Further Report on Antigonococcus Serum and Antigonococcus Bacterins. G. K. Swinburne, New York City.
68 Complications and Sequelæ of Gonorrhea in the Prostate. W. P. Herrick, N. Y.

### Montreal Medical Journal

*September*

69 "The Neurotic": A Character Study in Medicine. R. Monahan, Montreal.
70 *Banana Flour and Plantain Meal as a Food for Children Suffering from Diarrhea. A. E. Vipond, Montreal.
71 Diagnostic Significance of Pain in the Back. W. G. Turner, England.
72 *A Case of Hematoporphyrinuria. H. B. Cushing, Montreal.

70. Abstracted in THE JOURNAL, Sept. 3, 1910, p. 890.

72. **Case of Hematoporphyrinuria.**—In spite of the immediate institution of the treatment usually recommended in these cases, Cushing's patient, a woman, aged 69, became progressively weaker, passed urine and feces involuntarily, gradually sank into coma and died ten days after the peculiar color of the urine was first noticed. The urine remained of the same character to the end. The symptoms were characteristic—pigmentation of the urine, acute vomiting, with constipation, progressive weakness, with obscure nervous symptoms, such as ataxia, mental confusion and, finally, incontinence of urine and feces, and death in coma.

### Journal of the Arkansas Medical Society, Little Rock

*August*

73 Cholelithiasis. F. B. Young, Springdale.
74 *Dysentery in Children. F. T. Isbell, Horatio.
75 *Facts Relating to Health Conditions in the Delta of the Mississippi. V. MacCammon, Arkansas City.
76 *Infantile Scorbutus. H. N. Street, Argenta.
77 Anuria, Complicating Hemoglobinuria—A Surgical Condition. M. M. Norton, Sunnyside.
78 Modern Surgery. J. A. Lightfoot, Texarkana.

74, 75. Abstracted in THE JOURNAL, June 11, 1910, p. 1911.

76. Abstracted in THE JOURNAL, June 11, 1910, pp. 1991, 1992.

### Surgery, Gynecology and Obstetrics, Chicago

*September*

79 *Gastro-Intestinal Auto-Intoxication and Mucous Enterocolitis from the Viewpoint of Surgery. J. C. Wood, Cleveland, O.
80 Muscle Group Isolation and Nerve Anastomosis in the Treatment of the Paralyses of the Extremities. N. Allison and S. I. Schwab, St. Louis.
81 *Treatment of Spasticity and Athetosis by Resection of the Posterior Roots of the Spinal Cord. C. H. Frazier, Philadelphia.
82 *Management of the Breast in the Puerperium and During Lactation. C. S. Bacon, Chicago.
83 The Abdominal Wall After Delivery and the Prevention of Abdominal Insufficiency and the Neurasthenic State. H. M. Stowe, Chicago.
84 *Congenital Stenosis of the Pylorus. C. L. Scudder, Boston.
85 Chronic Gastromesenteric Ileus. A. L. Stavely, Washington, D.C.
86 *Parasitic Myomata. E. H. Richardson, Baltimore.
87 *Treatment of Congenital Dislocation of the Hip Without Plaster of Paris. H. O. Feiss, Cleveland, O.
88 *Floating Kidney. A. Herff, San Antonio, Texas.
89 Technic of Resection for Prolapse of the Rectum. J. G. Sheldon, Kansas City, Mo.
90 Self-Retaining Retractor for Abdominal Incisions. J. C. Logan, Pittsburg, Pa.

79. **Gastro-Intestinal Auto-Intoxication.**—According to Wood, who has gone into this subject deeply, the most diverse views prevail at present regarding the causation, pathology, and treatment of gastro-intestinal auto-intoxication and so-called enterocolitis. The association of the two conditions is frequently observed. A most common symptom of chronic appendicitis is the discharge of mucus by rectum because of the enteritis excited and perpetuated by the inflamed appendix. There is increasing evidence to show that a causal relationship exists between chronic appendicitis, with or without mucus enterocolitis, and gastro-intestinal auto-intoxication. Lesions of the female reproductive organs may also, either by interfering with intestinal peristalsis through direct pressure or reflexly, so interfere with digestion as to cause gastro-intestinal auto-intoxication. In dealing with the symptom-complex of gastro-intestinal auto-intoxication and mucus enterocolitis it is absolutely necessary, in the majority of instances, to have recourse to surgery before permanent relief is obtained. This statement presupposes that intelligent dietetic, hygienic, and medical measures have been faithfully observed previous to operation. Relief following surgical work, when indicated, is usually immediate. It may be necessary, however, to keep the patient, especially if neurotic, under observation and treatment for some months following the operation.

81. **Treatment of Spasticity and Athetosis.**—Frazier believes that without fear of contradiction it may be said unquestionably that section of the posterior roots relieves in most instances spasticity, even when the spasticity is of the most extreme type and of long duration, in adults and in children, whether of cerebral or of spinal origin. This statement is substantiated by all but one of the thirteen cases under consideration. From the practical standpoint it may be said that the spasticity is relieved to such a degree that resistance to passive motion is abolished and we can go still farther and say, that in most instances, the reflex associated movements, often a very annoying and distressing phenomenon, are also abolished usually together, and the reflexes formerly exaggerated become either normally active or less active than normal. They are permanently lost only in exceptional instances.

What is of considerable importance, and in striking contrast to such pre-existing methods as tenotomies and the like, the effects of root section are enduring. Of the thirteen cases cited, voluntary motion was restored to a marked degree in seven cases; in one of these, however, the spasticity was only partially relieved; of the remaining six, in one no mention is made, in another the condition was unchanged, and in one the movements were fairly good on one side but not so good on the other. Theoretically, we abolish the contractures and restore approximately the normal range of excursion in the movements of the limb; we eliminate the disturbing flexor reflexes of the leg and the equally disturbing reflex associated movements, which interfere with voluntary individual movements; we make provision for the return of voluntary motion and theoretically we should have brought about a condition which would enable the patient to use the limb for ordinary purposes. Practically, however, this is true only to a very limited degree. It may be that sufficient time has not elapsed in many of the cases for the best results to be attained. Practice, education, and muscular exercise continued over a longer period may accomplish more than has yet been observed.

82. **Management of Breast in Puerperium.**—The proper time to begin the nursing, says Bacon, depends on the needs of the

child, the activity of the gland and the condition of the mother. Premature children must have food shortly after birth, while a developed child can get along without food for two or three days without danger. There is no doubt, however, that the earliest secretion, the colostrum, is of considerable value to the child and should be secured, if possible. A good average rule is to put the child to the breast from three to six times a day for the first two or three days. On the second or third day, when the breast becomes congested on account of the distention of the lymphatics and blood-vessels supplying the secreting gland structures, there is generally more or less discomfort. This can be reduced in most cases by proper bandaging. The object of the bandage is support and not compression. It must be applied always so as to give relief and not cause more pain. This will be accomplished if it is applied so as to hold the breast to the front of the chest.

The best form of bandage, Bacon says, is made of strong muslin long enough to go around the chest and pin in front. It should be about 16 inches in width with notches 7 or 8 inches deep for the shoulders, over which the edges of the notches are pinned. If the patient is very sensitive and not sufficiently relieved by the bandage, ice bags should be applied. Formerly, Bacon frequently employed massage for this purpose, but lately he has almost discarded this manipulation because of the satisfactory results obtained by the ice. The pump is apt to be painful, its use is not founded on the right principle, and it should be avoided. The rules for the frequency and length of nursing, after the establishment of the secretion, depend on the amount of milk obtained by the child and the character of the secretion.

84. **Congenital Stenosis of Pylorus.**—In every one of 14 patients, 9 of whom were operated on by Scudder, a pyloric tumor having all the classical signs was palpated and inspected. Moreover, in every case the clinical course of the disease manifested itself as an obstruction to the exit of food from the stomach into the duodenum. In all of these cases the baby was gradually starving to death. The object of this investigation has been to determine whether or not gastro-enterostomy performed on these babies with a demonstrative pyloric stenosis modified in any particular the digestion of fat, starch and protein. The chemical and microscopic examinations of these stools show that in most of the cases the digestion is normal. The protein was not markedly increased in any amount in any of the stools and it was normal in the majority of cases. The percentage of fat in three cases was higher than normal. Excepting these the total amount of fat excreted in one day was within normal limits. These facts, Scudder believes, are evidence that the operation of gastro-enterostomy does not materially change the ultimate disposition of the two food components, fat and protein. If to the chemical evidence be added the clinical facts that all these babies without exception are thriving in apparently perfect health, that they have lived several years since the operation was done, have gained in weight, in height, and in every way seemed well and happy; if these carefully observed clinical facts are considered, the evidence is overwhelming that in these babies gastro-enterostomy has no ill effect on metabolism as measured by the digestion of fat, protein, and starch, and normal growth of these babies.

86. **Parasitic Myomata.**—The general contour of the tumor in Richardson's case, its definite capsule, the large vessels surrounded by myxomatous tissue situated in a position corresponding roughly to that of the pelvis, the peculiar striated appearance of the islands of myomatous tissue surrounding areas of degeneration, together with the general architecture, suggested very strongly a distorted kidney through some developmental anomaly. The resemblance was so striking at operation that microscopic examination was necessary to determine the true nature of the tumor. It was then found that the peculiar appearance was due to focal degenerations.

87. **Congenital Dislocation of Hip.**—The apparatus described by Feiss consists of an iron band running around the pelvis to just beyond the anterior superior spines; to this band is fastened an iron strip running down the external aspect of the thigh, not quite as far as the external condyle. To this there are fastened two bands, one for the lower part and the other for the upper part of the thigh. The stock used is wrought sheet iron, not tempered, and ranges from 15 to 18 gage, depending on the size of the child. The width of the various bands also depends on the size of the child, beginning with $\frac{5}{8}$ of an inch for an infant. The pelvic band may be made a little broader than the others.

88. **Floating Kidney.**—The operation of splitting the capsule and sewing it to the muscles with catgut has been modified by Herff and used on twenty-four patients without a single failure or a return of the affection. The technic of the modified operation is as follows: The usual incision, about six inches in length, is made, extending from the lower margin of the twelfth rib, along the outer edge of the sacrolumbalis group of muscles, downward and forward toward the median line. If the patient is fleshy, the incision may be extended to give sufficient room. The kidney is exposed in the usual manner, the fatty capsule separated from the organ and the kidney delivered. It is best to separate the fatty capsule as completely as possible before an attempt at delivering the kidney is made, as it simplifies the part of the operation very materially. It is unnecessary to remove the fatty capsule in all cases. Should this be well-developed, however, it may be done to prevent its becoming interposed between surfaces that are to be made to adhere. The true fibrous capsule is then carefully incised on a grooved director and separated from the cortical substance from pole to pole, to the extent of an inch and a quarter on either side of denuded capsule and temporarily fastened with hemostatic forceps. Before reducing the kidney, he passes two rubber tubes, through which silk cords have been drawn, under each pole of the kidney, traversing the perirenal fascia and fatty capsule that has not been detached completely at this point, in order to safeguard against a possible slipping of tubes from under the poles. The kidney is then reduced and placed in position. Two punctures are made on either side of the incision, traversing skin, fascia and muscle, which correspond to the position of the tubes under the poles, and are brought out through the aperture on both sides. The catgut sutures in capsules are rethreaded, passed through muscle and fascia and tied. These serve to keep apart the margins of the capsules in order to expose the denuded cortical portion of the kidney to muscle and fascia and insure adhesive inflammation. A few layers of catgut sutures unite the different layers of fascia and muscle that were divided in exposing the kidney. The skin incision is then closed with a continuous horsehair suture. The suspending rubber tubes containing silk cord are slit open to the level of the surface of the skin and the opposing ends of the cord are loosely tied over a small roll of sterilized gauze, which completes the operation.

### Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis

*September 1*

91 Municipal Water Supplies. R. O. Beard, Minneapolis.
92 Membranous Pericolitis. E. C. Robitshek, Minneapolis.
93 Volvulus. A. Barclay, Cloquet.
94 *Transgastric Jejunal Feeding After Gastro-Enterostomy Combined with Gastrostomy, Tested in a Case of Arteriomesenteric Ileus. A. Schwyzer, St. Paul.

94. Also published in *Annals of Surgery*, Sept., 1910, and abstracted in THE JOURNAL, Sept. 24, 1910, p. 1144.

### Journal of the Medical Society of New Jersey, Orange

*September*

95 *Acute Pyelitis in Children. G. B. Philhower, Nutley.
96 Significance of the Agglutinating Power of the Blood During and After Typhoid. G. T. Welch, Passaic.
97 Ophthalmia of the New-Born Infant: Its Causation, Prevention and Treatment. E. S. Sherman, Newark.
98 Mental Symptoms of Syphilis. J. H. W. Rhein, Philadelphia.

95. Abstracted in THE JOURNAL, Aug. 6, 1910, p. 526.

### Ohio State Medical Journal, Columbus

*September*

99 *Operative Treatment of Sterility in the Male. F. R. Hagner, Washington, D. C.
100 Clinical Significance of Non-Diabetic Acidosis. L. A. Levison, Toledo.
101 *Car Nausea. W. McL. Ayres, Cincinnati.
102 Extra-Uterine Pregnancy. H. T. Sutton, Zanesville.

103 Clinical Observations on Blood Coagulability and Calcium Therapy in Epilepsy. M. L. Austin, Gallipolis.
104 Congenital Syphilis in Pediatric Practice. F. Beekel, Cleveland.
105 Obstetrics as it is Practiced. M. Milliken, Hamilton.
106 Pathologic Conditions of the Nose, Throat and Ear as Etiologic Factors in Degeneracy. R. D. Fry, Cleveland.
107 Femoral Hernia. G. Goodhue, Dayton.
108 Protection of Child Life. C. O. Probst, Columbus.

99. Abstracted in THE JOURNAL, May 28, 1910, p. 1809.

101. **Observations on Car Nausea.**—In looking over the cases of the past 4 years, Ayres found that 75 patients gave car sickness as a symptom or sometimes as a chief complaint, and while it was associated in most cases with headaches, asthenopia and stomach trouble, yet it was given prominence by the patient. Stomach trouble was by far the most frequent accompaniment. Before working out the statistics, he had formed the decided impression that the majority of patients would show astigmatism contrary to rule, either simple or compound, and that the proportion was greater in hyperopic than myopic astigmatism. Out of the 75 patients 30 had plus astigmatism contrary to rule and 31 had plus astigmatism with the rule. Only 58 were contrary to rule, or 51 per cent. of the patients with astigmatism against the rule had car nausea while only 3 per cent. of those having astigmatism with the rule complained of it. In myopic astigmatism, both simple and compound, the proportion is decidedly less, and in the few cases of minus astigmatism contrary to rule, only one-fourth of them complained of car sickness, or just one-half as many as found in plus astigmatism contrary to rule. Car sickness was found in every case associated with astigmatism with or without some other forms of ametropia; it was found in mixed astigmatism and it is to be noted also that 55 per cent. of those unusual cases which had astigmatism with the rule in one eye and against in the other complained of it. The adjustment of correct lenses cured the nausea in many cases completely, other cases reported nearly complete cure, with only occasionally a feeling of nausea on the train, and in every case benefit was derived from the lenses, for not only did the train sickness disappear, but with it in most cases the vertigo, the headaches, the asthenopia and, better still, the stomach trouble.

### Denver Medical Times and Utah Medical Journal

*September*

109 Pyogenic Infections in Tuberculosis. G. R. Pogue, Greeley, Colo.
110 The National Florence Crittenton Mission. A. Ditson, Denver.
111 Atropin. W. F. Waugh, Chicago.
112 Practical Vaccine Therapy and Immunity. W. C. K. Berlin, Denver.
113 Personal Hygiene in Infancy and Childhood. W. C. Bane, Denver.
114 Anatomy of the Rectum, and the Saccules of Horner. M. H. Sears, Denver.
115 Diagnostic and Therapeutic Value of the Roentgen Ray. C. F. Osgood, Ogden, Utah.
116 Necessity for Early Treatment for Strabismus. F. Stauffer, Salt Lake City.

### American Journal of Surgery, New York

*September*

117 Surgery of the Large Intestine. J. F. Erdmann, New York.
118 *A New Method of Intestinal Anastomosis. A. L. Soresi, New York.
119 Nomenclature of the Diseases of the Appendix. A. V. Moschcowitz, New York.
120 Bier's Hyperemia in General Practice. E. A. Tracy, Boston.
121 Local Anesthesia. A. E. Hertzler, Kansas City, Mo.
122 Indication for Bier's Hyperemia in Acute Surgical Conditions. E. Adams, New York.

118. **Intestinal Anastomosis.**—The method which Soresi describes he believes eliminates all the inconvenience attributed to the end-to-end anastomosis, and by being the most rapid (more rapid in fact than all mechanical devices), very easy and simple it eliminates the danger common to every other form of anastomosis, namely, long manipulation of the intestine, which makes infection more apt to occur and causes trauma, which facilitates the formation of adhesions. The method has been used by various surgeons in 14 cases in human beings after it was used, always successfully, over 200 times on dogs. This is a suture method in which the cut ends of the intestines are sutured and inverted over a rubber tube. The size of the tube should be one-third less than that of the intestine to be anastomosed, and of about the same length as its diameter. Any tube of soft resilient rubber, about 0.5 mm. in thickness, can be used.

A plain round, straight or curved needle threaded with silk or linen is passed from within the lumen of either of the two segments of the intestine through the whole thickness of the gut and mesentery, traversing the dead space at a distance of about 3 cm. from the cut edge, avoiding, of course, any blood vessels. The end of silk or linen is held by an artery forceps. The needle is then passed through any one of the catgut loops of the rubber tube; then going to the other segment of the intestine on the same side, it is passed from without in through the mesentery and intestinal wall, again traversing the dead space. The needle is then brought out again through intestinal wall and mesentery, and going back toward the first segment of intestine it is passed under the same catgut loop of the rubber tube, and finally passing through the mesentery and intestinal wall, will come out inside of the intestine at a distance of a few micromillimeters from the point of beginning of the stitch. It will be noted that the dead spaces have been traversed four times. The two segments of the intestine are approximated and the two mesenteric angles (dead spaces) are securely closed by gently tying the two ends of silk, the knot being in the inside of the intestine. The two ends of silk are left long, one being held by an artery forceps; the other, armed with the needle, will be brought outside of the intestinal cavity by passing through the whole intestinal wall, close to the attachment of the mesentery and is used for the circular mattress suture of the second stage. The two segments of the intestine are brought over the rubber tube and held in place by one or more temporary stitches, which pass through a catgut loop, thus preventing the tube from slipping and facilitating the circular mattress suture; the temporary stitches should be cut very close to the knot. The catgut loops stand prominently between the two edges of the intestine. The needle is passed through the catgut loop near the attachment of the mesentery, close to the mesenteric angle, and at about 2 mm. from the cut edge of the opposite segment of gut a continuous mattress stitch is begun; the needle goes through the whole thickness of the intestine. As the needle passes from one segment to the other it goes through the catgut loops, the serosa is inverted with each stitch, by tucking it under with a thumb forceps, and gentle traction is maintained so that each stitch is kept taut, and no silk is seen between the two cut edges, which must be closely approximated. Care should be exercised not to pull the silk perpendicularly to the intestine because by so doing it always tears the gut. The traction on the silk must be made by keeping it parallel to the suture line. When the circular mattress stitch is completed the silk is knotted to the end which was held by the artery forceps and the ends are cut close to the knot. The temporary stitches can be cut off when they are reached with the circular suture.

Soresi says that one needs not to be particular as to the regularity of the mattress stitch; the only important points are: to pass the silk under a catgut loop at least once, when going from one segment to the other, and to invert the serosa, keeping the silk taut. The intestine is washed with normal saline solution; and clean pads and towels are put around, the anastomosed gut is taken in one hand and one strand of the catgut is gently pulled until about half the number of loops have disappeared; the ends of the catgut are then knotted and cut close. While pulling the catgut it will be seen that the serosa is inverted.

### Virginia Medical Semi-Monthly, Richmond

*September 9*

123 Carcinoma of the Uterus. F. H. Hancock, Norfolk.
124 Typhoid Fever—Diagnosis, Local Manifestations and Reasons for Specific Treatment. H. E. Jones, Roanoke.
125 The Gold-Cure Fraud Again. S. L. Hannon, La Plata, Md.
126 Importance of Differential Diagnosis Between Chancre and Chancroid. W. H. Atkinson, Washington, D. C.

### Journal of Nervous and Mental Diseases, New York

*September*

127 Tumors and Cysts of the Spinal Cord with a Record of Two Cases. C. K. Mills, Philadelphia.
128 Myositis Ossificans. J. K. Mitchell, Philadelphia.
129 *Myasthenia Gravis. M. G. Schlapp and J. J. Walsh, New York.

129. **Myasthenia Gravis.**—In this case, which was studied rather carefully and had at the beginning some appearances that might lead one to think of hysteria, a story of fright was obtained, followed immediately by the gradual development of all the symptoms of myasthenia gravis. The patient was a young woman of 24, a cashier. She was very sensible, with no caprices, no nervous symptoms, and none of the faults of disposition usually set down as due to a tendency to hysteria. She had been in perfect health, missing no time, undisturbed by the menstrual periods, with regular bowels and a good appetite. She was a favorite in her own family.

One evening in 1906 a brother was brought home dead. She was at home when he was brought in and she suffered severely from the shock, swooning away and then afterward vomiting. She was better after half an hour, but she did not sleep that night and felt nauseated during most of the next day. She was unable to eat much for several days and headaches developed. These headaches were very severe and continued even after her appetite returned to a great degree and when she thought that she was quite well otherwise. When she returned to work after the funeral she found that she was very easily tired and that her eyelids began to twitch. The left one was the first to be affected, but both bothered her after a short time. After the twitching had continued for some time she would find it easy to open her eyes, but rather hard to keep them open and the lids would droop. Speech became very tiresome to her too, and then after an interval she would be worse, and at the end of six weeks she found it very difficult to hold her eyelids up or to talk much, and some difficulty of swallowing developed. These symptoms of gradual loss of use of the muscles continued to develop for six months with certain variations. She died December 23 from sheer weakness of the respiratory muscles, together with the malnutrition consequent on difficulty of swallowing.

The course of the case was typical of myasthenia gravis, except that the intermissions were perhaps more marked than are usually seen. The authors suggest that the secretion of the thymus gland represents some material that maintains the tone and the vitality of the dark red muscle substance. When this diminishes the white substance overgrows somewhat according to that law which seems to hold in all the tissues, that the disappearance of one form of tissue leads to hypertrophy of neighboring tissues of other kinds in the same order. It is possible that the thymus may have the double function of maintaining the vitality of the dark red muscle substance and inhibiting the light red muscle substance. Such double functions are rather common and are to be expected in nature. The shock or fright that represents the beginning of this case of myasthenia gravis may have disturbed certain trophic nervous influences that enabled the thymus gland to do its work.

### Medical Fortnightly, St. Louis, Mo.

*September 10*

130 Hygiene of School Life. G. F. Butler, Chicago, Ill.
131 Procreation Laws. G. H. Bogart, Brookville, Ind.
132 Objectionable and Unusable Chinese Drugs Imported Into the United States. A. Schneider.

### Providence Medical Journal

*September*

133 *Manifestations of the Angioneurotic Group of Diseases. G. S. Matthews, Providence.
134 Epithelioma. J. V. Shoemaker, Philadelphia.
135 The Dispensing Druggist. F. C. Clark, Providence.
136 Precocity and School Life. F. N. Brown, Providence.
137 Epidemic Poliomyelitis. F. T. Fulton, Providence.
138 Infantile Paralysis. W. R. White, Providence.

133. **Manifestations of the Angioneurotic Group of Diseases.**—The following summary is made by Matthews of his cases:

*Case* 1. History of attacks of pain and lameness in ankles, calves, knees, hips. Purpuric spots on knees, calves, thighs. Colicky pains in abdomen, at first mild, then very severe. Some edema of feet. Recurring purpura of fingers and foot, with some edema of fingers. Herpes. Nephritis. Endocarditis. Death.

*Case* 2. At first pains in epigastrium after taking food. Tenderness over epigastrium. Pains increasing in severity and more generally distributed over abdomen and regardless of food. Marked erythema with here and there urticarial wheals. Localized edema. Recurrence of erythema. Much headache. Albumen and casts and blood in urine. Recovery.

*Case* 3. Recurrent attacks of urticaria, pains in chest and abdomen twenty years ago. Arthritis. Edema of ankle. Purpuric spots. Fever for a few days. Pains in upper abdomen and chest. Recurring attacks of pain in abdomen, chest, rectum. Glycosuria. Recovery.

*Case* 4. Sudden attack of croup. Profuse urticaria, followed by prompt relief of the laryngitis. Recovery.

### Kansas City Medical Index-Lancet

*September*

139 Plea for State Provision for Nervous Invalids. J. Punton, Kansas City.
140 Spinal Analgesia by the Morton Method. St. E. Sanders, Kansas City.
141 Nursing for the Neurologist. The Psychic Factor. What to Avoid. The Principles that Guide. T. A. Williams, Washington, D. C.
142 Hospital Accounting. W. T. Dillon, Kansas City.
143 What Shall We Do with the Tuberculous Insane? E. W. Schaufler, Kansas City.

### Atlanta Journal-Record of Medicine

*August*

144 Diagnosis and Treatment of Fractures. F. K. Boland, Atlanta.
145 The Public and Venereal Diseases. R. H. Stanley, Albany, Ga.
146 Development and Nerve Supply of the Intestinal Canal Surgically Considered. J. L. Campbell, Atlanta.
147 Tuberculosis of Bones and Joints. T. Toepel, Atlanta.
148 Relation the House Fly Bears to Typhoid and Other Infectious Diseases. J. W. Palmer, Ailey, Ga.
149 Amylic and Ethylic Alcohol Differentiated; Physiologic Action and Therapeutic Uses and Abuses of the Alcohol Group; Education as Essential as Legislation in Solving the Alcohol Problem B. W. Hall, Bowman, Ga.

### American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

*September*

150 Surgical Treatment of Vaginal Delivery. E. P. Davis, Philadelphia.
151 Extra-Uterine Pregnancy from the Standpoint of the General Practitioner. G. L. Hunner, Baltimore.
152 Treatment of Eclampsia. B. C. Hirst, Philadelphia.
153 Diagnosis and Differential Diagnosis of the Pathologic Processes Causing Enlargement of the Kidney. C. G. Cumston, Boston.
154 *Method of Anastomotic Repair of the Divided Ureter. M. McLean, New York.
155 *Fibromyoma of the Uterus. I. S. Stone, Washington, D. C.
156 Spontaneous Rupture of the Uterus Due to Hydatidiform Mole. R. Waldo, New York.
157 Deformity of Both Hands Occurring in a Child Delivered from a Mother with Oligohydramnios. W. H. Wells, Philadelphia.
158 Neuromuscular Exercises, Done at the Word of Command, in the Treatment of Rotary Lateral Curvature of the Spine. J. J. Nutt, New York.
159 Pericardial Adhesions in Children. D. L. Schram, Chicago.
160 The Middle Ear. C. G. Crane, Brooklyn, N. Y.
161 Infantile Scurvy. T. S. D. Grasty, Washington, D. C.
162 Pott's Disease. R. G. Moore, New York.

154. Abstracted in THE JOURNAL, May 28, 1910, p. 1813.
155. Abstracted in THE JOURNAL, June 11, 1910, p. 1993.

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## FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

### British Medical Journal, London

*September 3*

1 *Mechanotherapy in Disease. A. Bryce.
2 Interpretation of Roentgen Ray Negatives. A. H. Pirie.
3 The Spread of Cancer Among the Descendants of the Liberated Africans or Creoles of Sierra Leone. W. Renner.
4 *One Cause of Cancer as Illustrated by Epithelioma in Kashmir. E. F. Neve.
5 Provision of Medical Treatment of School Children. J. Kerr.
6 *Defense of the Home Treatment and Prevention of Scarlet Fever. R. Milne.
7 The Tuberculosis Problem on County Areas. A. H. Hogarth.
8 Part-Time Medical Officers of Health. F. E. Fremantle.
9 Reform of Death Certification. W. Collins.
10 Town Planning in Relation to Public Health. J. Robertson.
11 Administrative Control of Ophthalmia Neonatorum. G. Reid.
12 Etiology and Prevention of Summer Diarrhea. J. Niven.
13 State Sickness Insurance (Provision of Medical Attendance) as Affecting the Public Health and the Medical Profession. S. Whitaker and C. S. Loch.
14 Importance of Dental Surgery. J. H. Mummery.

15 Effect of Foodstuffs in the Causation and Prevention of Dental Caries. J. S. Wallace.
16 Care of the Mouth During General Disorders. H. Mackenzie.
17 Influence of Climate on Dental Caries. A. S. Underwood.

1. **Mechanotherapy in Disease.**—Bryce regards it as very remarkable that the medical profession should so long have neglected the treatment of disease by physical methods or mechanotherapy, especially when in its various branches it has long been exploited by so many irregular practitioners. Speaking of osteopathy, Bryce has no hesitation in saying that the vast majority of his cases are quite capable of being successfully treated by other methods, and that many ailments, especially acute conditions such as typhoid fever, pneumonia, nephritis, "cold in the head," are liable to be seriously aggravated by manipulative attention. It is lamentable that the apotheosis of mechanotherapy should result in such ill-guided enthusiasm as its application to many acute disorders would testify. However, Bryce continues, scientific mechanotherapy has a distinct field of usefulness. He reports several cases which, he says, could not have been treated successfully without some form of manipulative therapeutics. He has used the method in cases of asthma, neurasthenia, neuralgia, and others which have resisted the orthodox methods of treatment, and in some cases he has had beneficial results which could not have been attributed to the influence of suggestion. However, some of the benefit derived may have been due to improved physical condition which naturally results from the treatment, and some of it may have been due to the preliminary relaxation of the muscles and the breaking down of adhesions.

4. **One Cause of Cancer.**—During 25 years, of 4,902 tumors removed by operation in the Kashmir Mission Hospital, Neve found that no less than 1,720 were malignant, and of these 1,189 were epitheliomatous, and 848 were on the thighs or abdomen and were due to the irritation of the kangri, a portable fire basket, carried by the people under their clothes. When sitting down this rests against the inner sides of the thighs or the front of the abdomen. The front of the chest, the breasts and the calves of the leg all are exposed to the irritation of the heat, and these regions are also liable to become the seats of epitheliomatous disease, although much less frequently than the thighs and abdomen. The disease is quite as common in men as in women. The average age of the patients was as high as 55. Epithelioma is extremely rare under 40. Scars from previous burns are often the starting point for epitheliomata. Kangri-burn cancer is a typical squamous-celled epithelioma. In the early stages, the malignancy is slight, it is too slow to infect glands, and is very amenable to operation. In late cases deep glands are involved, and in many cases, owing to adhesions and brawny infiltration of the skin and cellular tissue, it is inoperable. In many cases its origin is in scar tissue. It is demonstrably due to a definite cause, namely, irritation from the constant application of heat. In this respect it is similar to other epitheliomata resulting from mechanical, chemical or thermal irritation. The nature of the cause is opposed to a parasitic theory of origin, and favors a trophic theory of cancer.

6. **Prevention of Scarlet Fever.**—During the first four days in a scarlet fever case commencing at the earliest possible moment, Milne has pure eucalyptus oil gently rubbed in morning and evening, all over the body from the crown of the head to the soles of the feet. Afterward this is repeated once a day until the tenth day of the disease. The tonsils he always swabs with a 1 in 10 phenol solution every 2 hours for the first 24 hours, rarely longer. For 26 years Milne has used pure eucalyptus oil in this way. When this treatment is commenced early, he asserts, secondary infection never occurs and complications are unknown.

## Lancet, London

*September 3*

18 *Etiology and Treatment of Sterility. R. A. Gibbons.
19 *Twenty Cases of Syphilis Treated with Ehrlich's "606." J. E. R. McDonagh.
20 *Influence of the New Ehrlich Preparation, "606" (Dioxydiamidoarsenobenzol), on Recurrent Fever in Rats. J. McIntosh.
21 Value of Ossiculectomy in Chronic Middle-Ear Suppuration as a Means of Avoiding the Complete Mastoid Operation. H. F. Tod
22 *Isohemolysis in Relation to Cancer. H. Upcott.
23 Further Observations on Typhoid Carriers. D. S. Davies, I. W. Hall, E. Emrys-Roberts and J. Fletcher.
24 Rhinosporidium Kinealyi in Unusual Situations. A. C. Ingram.
25 Congenital Coxa Valga. J. J. Clarke.
26 Leprosy in a White Person Associated with Insanity. R. Jones and R. W. J. Pearson.
27 *Bacteriology of Epidemic Summer Diarrhea. R. S. Williams, H. L. Murray and C. Rundle.
28 Technic of a Simplified Form of the Wassermann Reaction. W. d'E. Emery.
29 Cerebellar Hemorrhage. A. E. W. Hird.

18. **Sterility.**—There can be no doubt, says Gibbons, about the gonococcus being responsible for many cases of sterility, but it is useless to endeavor to make it responsible for nearly all. Gibbons draws attention to the fact that certain continuous vaginal discharges, apart from that caused by the gonococcus, which cannot be cured by douching, may yield to vaccine treatment if the organism causing that discharge be separated, cultivated and a vaccine made therefrom. The modern internal treatment by organotherapy requires most careful consideration and much more experience before statistics of real value can be tabulated. In his own experience, Gibbons has had such success by curing ordinary vaginal discharges, conception following thereon, that he has been most seriously impressed by the fact that apparently simple discharge may contain much toxic material which can act on the protoplasm of the spermatozoa. If any disease exists it must be cured, and if it does not yield to ordinary treatment thorough curetting may be advised, or if this will not be entertained, a course of waters may be of the greatest service.

19. **Ehrlich's "606" Specific for Syphilis.**—It appears from the cases McDonagh has treated, that the earlier the syphilis the larger the dose required (0.45 to 0.6 gram), and that 0.3 gram is ample in the late stages. In his cases it was the general rule for the temperature to rise to 100 F. on the night of the injection, and to become normal after 48 hours; sometimes the fever persisted to the third day, but only in those cases which had some of the toxic edema. In only one case was any albumin found after injection, and in this case it was transient. In almost every case an induration could be felt in both buttocks, probably due to a fibrosis caused by the caustic action of the sodium hydrate; whether the induration will ever disappear time alone will show; at any rate, it causes the patient no inconvenience. Beyond the improvement observed by the naked eye, McDonagh was very much struck by the extraordinary change for the better in almost every patient's general condition; they not only appeared brighter, but felt ever so much better and put on weight; this alone is a great achievement, since there is scarcely a patient who does not become depressed, anemic and lose weight under mercurial treatment. It seems that the severer the case the quicker the action, and the results obtained so far, McDonagh says, reach beyond expectation.

20. **Influence of the New Ehrlich Preparation.**—McIntosh found that "606" (dioxydiamidoarsenobenzol) is a specific remedy for European relapsing fever, and thinks it will be equally efficient in the other spirochætoses.

22. **Isohemolysis in Relation to Cancer.**—It is evident from Upcott's work that the possession of isohemolysis is very far from being pathognomonic of cancer. But then very few signs of the disease in its curable stages will bear this interpretation. A reaction which is positive in 50 per cent. of patients with cancer deserves, he thinks, to be weighed in the balance with other facts in the endeavor to arrive at a diagnosis. The only other conditions likely to be confounded with cancer in which hemolysis is frequently encountered are tuberculosis and pernicious anemia, especially the former. In such cases, if hemolysis be proved, it is possible that one of the forms of tuberculin reaction would be of value. A negative hemolytic reaction can, of course, carry no weight.

27. **Epidemic Summer Diarrhea.**—The authors isolated from the feces, heart's blood and scraping of abdominal organs of cases of epidemic diarrhea, two groups of organisms producing diarrhea in puppies, the one group apparently new, and corresponding exactly with their original strain *Bacillus F.* and the other identical with *Bacillus suipestifer*. These groups are distinguishable from each other, from *B. paratyphoid* and

from *Bacillus suipestifer* by absorption tests alone. They were not present in the stools of 100 normal children.

### Medical Press and Circular, London

*August 31*

30 Spasmodic Pseudotumors of the Large Intestine. M. Loeper.
31 Gastroduodenal Ulceration, the Indications for, and the Choice of, Operation. K. W. Monsarrat.
32 Vicious Circles Associated with the Sexual Organs. J. B. Hurry.

### Clinical Journal, London

*August 31*

33 Radical Cure of Femoral Hernia. C. B. Lockwood.
34 Simple Infantile Anemia. E. Cautley.
35 Life and Work of Edward Jenner. F. M. Sandwith.

### Glasgow Medical Journal

*September*

36 Treatment of Operable and Inoperable Carcinoma of the Mamma. G. T. Beatson.
37 *Action of Thiosinamin. F. Charteris.
38 Old Glasgow Institutions with Medical Associations. H. A. McLean.

37. **Action of Thiosinamin.**—Charteris' records show that in man thiosinamin does not cause alteration in the number of leucocytes, whether given by the mouth or by subcutaneous injection. His experience with thiosinamin preparations is extremely unsatisfactory, and quite fails, he says, to sustain the extravagant and enthusiastic reports of those who have obtained remarkable results in joint cases, Dupuytren's contracture and nervous diseases.

### Journal of Laryngology, Rhinology and Otology, London

*September*

39 Treatment, Course and Prognosis of Purulent Diseases of the Labyrinth. G. Alexander.
40 Nasopharyngeal Origin of Chorea. S. L. de Ponthière.

### British Journal Children's Diseases, London

*August*

41 Duty of the General Practitioner to the Deaf Child. M. Yearsley.
42 *Portals of Infection in Tuberculosis. T. R. Whipham.
43 Atelciosis in a Man, Aged 42; Physical Development Said to have been Arrested at about the Age of 9 Years. F. P. Weber.
44 *Rare Congenital Deformity of Nose in an Infant. G. Wilkinson.

42. **Portals of Infection in Tuberculosis.**—In the case of children, Whipham thinks it probable that many patients are infected through the alimentary tract, and that in them the bovine bacillus plays an important, though not exclusive part. It must be remembered that children are very liable to become infected, and when once the disease has gained an entrance it spreads rapidly, as a rule, giving rise to a generalized infection. The tissues in early life show but a slight resistance to the tubercle bacillus, and have little if any power to limit the disease to a given area, or to start reparative processes when once attacked. With age, however, the power of resistance increases. In infancy the lymphatic glands are the first tissues to be involved, the bronchial glands, as a rule, the site of election. The protective power of the gland at this age being but feeble, a generalized tuberculosis in most cases results. After the first year or so the glands are more able to withstand the infection, so that the protection is afforded, perhaps for a time, perhaps permanently. Later, about puberty, the rôle of the lymphatic glands diminishes, and the disease is characterized by lesions in the apices of the lungs as in adult life, but at this age the infection is apt to be more rapid and more virulent than after full maturity has been attained.

44. **Rare Congenital Deformity of the Nose.**—The deformity in Wilkinson's case consisted of a deep depression in the middle line of the nose, with wide separation of the nostrils and flattening and broadening of the whole feature. The nose was 3 cm. wide at the level of the alæ, but only projected about 1 cm., the greatest projection being on either side of the middle line in front of each nostril. These two prominences are separated by a depression of the tip of the nose 2 cm. wide. The nasal bones and nasal processes of the superior maxillæ were flattened. There was no separation between the nasal bones. The columella was 2 cm. broad, and the anterior nasal spine could be felt behind the columella as a broad projection of bone, about 1½ cm. from side to side. On inspection of the nasal passages the anterior ends of the nasal septum could be seen as a prominent ridge on the inner sides of each vestibule. The two sides of the septum were apparently separated from each other. There was no nasal obstruction. On everting the upper lip there was seen a distinct notch on the buccal surface in the very center of the lip. There was also a well-marked notch in the middle line of the alveolar process. The two halves of the alveolus were not in alignment, but met with a forward-pointing angle. Two uncut incisors could be felt beneath the gum on either side of the mesial notch, showing that this represented a division between the two halves of the premaxillary bone. The deformity arose, no doubt, from failure of fusion of the two mesial masses of the frontonasal process.

### Annales de Gynécologie et d'Obstétrique, Paris

*August, XXXVII, No. 8, pp. 449-511*

45 *Treatment of Vaginal Cystocele. (Sur la cure de la cystocèle vaginale ou hernie pré-utérine). H. Violet.
46 *Anemia of Pernicious Type During Pregnancy. Audebert and Dalous.
47 Arterial Irrigation of Lower Segment of the Uterus. A. Couvelaire.

45. **Treatment of Vaginal Cystocele.**—Violet distinguishes between (1) primary prolapse of the uterus, which requires hysteropexy or hysterectomy; (2) primary downward displacement of the lower portion of the vagina, corresponding to an actual eventration by way of the perineum, correction of which requires suturing of the levator ani muscles either anterior or posterior to the bladder, and (3) preuterine and retrouterine hernias in the anterior or posterior cul-de-sac of the vagina, by way of the weakest points in the sacro-rectal-genital aponeurosis. He describes the technic which he applies in the latter form, giving the details with illustrations of three cases. The main features of his technic are the closing of the hernial gap by suturing the vesico-uterine ligaments, following this by fixation of the uterus at a point on or just above the isthmus, fastening the uterus thus in physiologic anteversion. As the vagina cystocele is generally associated with sinking of the posterior vaginal vault and elongation of the lips of the cervix, he follows with lozenge-shaped resection of the posterior cul-de-sac and amputation of the cervix before proceeding to reconstruct the perineum by direct suture of the levator ani muscles.

46. **Pernicious Anemia During Pregnancy.**—The case reported is interesting as the extreme anemia of the pernicious type in a ii-para of 26 showed a pronounced turn for the better immediately after the delivery of a macerated fetus about term. The spleen was considerably enlarged, which is not generally the rule with pernicious anemia in pregnancy.

### Annales des Maladies des Org. Génito-urinaires, Paris

*August 15, XXVIII, No. 16, pp. 1441-1536*

48 *Hypertrophy of the Trabeculæ in the Bladder as Early Sign of Tabes. Eighteen Cases. R. M. Fronnchtéine.
49 Treatment of Chronic Gonorrheal Urethritis. M. Jungano. Commenced in No. 15.
50 *Multiple Lesions of the Kidneys. (Lesions multiples des reins). Zimnitzki.

48. Abstracted in THE JOURNAL, September 3, 1910, page 899.

50. **Multiple Lesions of the Kidneys.**—Zimnitzki urges the importance of striving to detect and distinguish the various pathologic processes that may be developing at the same time in an organ. In a case described, a man of 54 with venereal antecedents developed a puzzling syndrome finally revealing itself as a combination of stone in the kidney and mixed pyohydronephrosis with atrophy of one kidney and compensating hypertrophy of the other. He cites several cases of the four types of hydronephrosis: the true internal, the external or false hydronephrosis, the combination of both and the intermittent.

### Annales de Médecine et Chirurgie Infantiles, Paris

*August 15, XIV, No. 16, pp. 493-520*

51 Paroxysmal Hemoglobinuria in Boy of Four. P. Haushalter.
52 Localization of Lesions in Child's Lung in Pneumonia. E. Weill and G. Mouriquand.
53 Seaside Sanatoria for Rachitis and Surgical Tuberculosis. (La cure marine à Berck). P. Audion.

### Archives des Maladies de l'App. Digestif, Paris

*July, IV, No. 7, pp. 369-432*

54 *Effects of Nicotin Poisoning on the Finer Structure of the Gastric Mucosa. J. Grosmann and A. Jiano.
55 Incurable Obesity. (Les obésités irreductibles). M. Labbé.
56 Rapidity of Evacuation from the Stomach of Different Kinds of Milk. (Sur la vitesse du passage pylorique de diverses sortes de lait). P. Carnot and G. J. Slavu.
57 Care Before and After Operations on the Stomach. (Des soins pré et post-opératoires dans les interventions sur l'estomac). Faix.

54. **Effect of Nicotin Poisoning on the Stomach.**—The experiments on dogs here reported from Bucharest resulted constantly in the development of both parenchymatous and interstitial changes in the inner lining of the stomach—a mixed gastritis.

### Lyon Médical, Lyons

*August 14, CXV, No. 33, pp. 237-276*

58 Autoserotherapy and Heteroserotherapy. (Action de certaines serosités pathologiques). M. Jaboulay.

*August 21, No. 34, pp. 277-316*

59 Five Cases of Malta Fever Observed at Lyons. J. Mollard and L. Rimaud. Commenced in No. 32.
60 Pascal's Malady. P. J. Navarre. Commenced in No. 31.

### Presse Médicale, Paris

*August 24, XVIII, No. 68, pp. 641-648*

61 Intravesical Segregation of the Urine versus Catheterization of the Ureters. (Division intra-vésicale des urines ou cathétérisme urétéral?) G. Marion.
62 Tuberculosis in the Postal and Telegraph Services. R. Grenier.
63 The Roentgen Rays in Dermatology. A. Barré.

*August 27, No. 69, pp. 649-656*

64 Heart Complications with Various Varieties of Polymorphous Erythema. P. Teissier and H. Schaeffer.
65 Choreiform Movements in Tuberculous Meningitis. A. Gonnet.

### Revue de Gynécologie, Paris

*August, XV, No. 2, pp. 97-192*

66 *Improved Technic for Subtotal and Total Abdominal Hysterectomy. M. Chaput.
67 Ureter Anomalies. I. E. Papin.
68 Case of Bilharziosis of the Bladder. G. Marion.

66. **Technic for Hysterectomy.**—Chaput asserts that the drawbacks of subtotal hysterectomy (liability to cancerous degeneration and infection) can be obviated by excising the mucosa lining of the cervix and pushing the entire stump of the cervix down into the vagina and suturing the walls of the latter above it, thus excluding it entirely from the abdominal cavity. He obtains access to the cervix through an incision in the anterior vaginal vault, then slits the cervix, spreads it open flat and resects the mucosa and then sutures it into its cylindrical shape again and invaginates it into the vagina. He also asserts that the drawbacks of total hysterectomy can be obviated by first removing the cervix through the vagina and then removing the rest of the uterus by abdominal section. This is particularly advantageous for the obese. The vaginal operation can be done under local, general or spinal anesthesia. The clamps are removed the second day and the abdominal operation is then done. He describes this technic in detail with illustrations.

### Semaine Médicale, Paris

*August 31, XXX, No. 35, pp. 409-420*

69 *Traumatic Neuritis and Hysteria. F. Moty.

69. **Traumatic Neuritis and Hysteria.**—Moty remarks that as the infectious complications of trauma are becoming of less importance, the nervous disturbances resulting from the traumatism are looming up into constantly greater prominence. Two facts seem to be established by his experience with 161 cases of traumatic neuritis, namely, that the existence of a neuritis can be presumed when the region affected is colder than the corresponding region on the other side, and secondly, that the outcome of the trouble depends in large measure on the individual tendency to hysteria in the patient. If the limb is found colder than its mate, electric tests may confirm the assumption of neuritis. The muscles generally atrophy early and likewise the bones; in some of his patients the sole of the foot was markedly smaller than its mate 3 months after a fracture of the leg with neuritis. In some puzzling cases with chronic arthritis of the knee, the knee was hot, the leg above or below unusually cold, and the diagnosis of neuritis was confirmed by the asymmetrical shortness of the sole. Trophic ulcerations can be distinguished from tuberculous lesions by this chilliness and atrophy of the limb. When there is traumatic paralysis or contracture there is generally an accompanying neuritis and more or less hysteria, so that he has become convinced that progressive neuritis is a form of what he calls hysterotraumatism. The prognosis, he reiterates, does not depend on the gravity of the trauma but on the degree of hysteria, so that examination of the visual field to estimate the tendency to hysteria and inquiry into the personal and family antecedents will generally afford a basis for the prognosis. In about 10 per cent. of his 161 cases no measures proved more than transiently effectual. If the primary lesion was grave the cure may require years and the limb cannot be expected to regain its former strength after suture of the nerve, although the sensory functioning may be comparatively normal. He commends Weir Mitchell's methods of revulsion in treatment of neuritis; galvanic treatment may also prove effectual. He has witnessed the cure of old trophic ulcers under a few weeks of the continuous current; the sinusoidal current and undulating galvanic current may also render good service. Psychic treatment is of prime importance, he emphasizes; as the course of a neuritis is variable, certain impressions or auto-suggestions may induce at any time a turn for the better. In one of his cases the limb was amputated as a last resort and the intense pains were permanently cured thereby. If the amputation is done while the neuritis is still progressing, the stump is liable to present further neuritic disturbances. In this connection he refers approvingly to Sherren's work in this line (summarized in THE JOURNAL, Feb. 12, 1910, page 571). In 2 cases in which the spinal nerves were involved, he resected the posterior roots of the plexus involved but with only transient benefit. He considers nerve-stretching as practically abandoned now except to release the nerve.

### Berliner klinische Wochenschrift

*August 15, XLVII, No. 33, pp. 1525-1564*

70 Farewell Address. (Abschiedsvorlesung). R. v. Olshausen.
71 *Experiences with Ehrlich's "606" in Syphilis. (Ergebnisse mit Dioxydiamidoarsenobenzol). H. Isaac.
72 *Experiences with Ehrlich's "606" in Syphilis. (Die subcutane Anwendung des Ehrlich-Hata'schen Syphilispräparates). L. Michaelis.
73 *Treatment of Disease of the Large Intestine with Drugs in the Form of Gas or Spray. (Behandlung von Erkrankungen des Dickdarms mit gasförmigen und zerstäubten Medikamenten). M. Skaller.
74 Formol Test for Nitrogen in Stomach Content. (N-Bestimmung mit Formol im Mageninhalt und seine diagnostische Bedeutung). A. Barlocco.
75 Biologic Analysis of Chyliform Effusions. U. Carpi.
76 Method of Distinguishing Serum Containing Mercury from Serum of Syphilitics Treated with Mercury. (Zur Unterscheidung sublimathaltiger Sera von Seris mit Quecksilber behandelten Luetiker). R. Müller.
77 Wassermann Reaction after Specific Treatment of Inherited Syphilis. J. Igersheimer.
78 Justification for Spinal Puncture and Puncture of the Brain. (Beiträge zur Frage der Berechtigung der spinalen und cerebralen Punktion). F. Apelt.
79 How to Distinguish Systole from Diastole in Auscultating. R. Schmincke.
80 Removal of Foreign Bodies from Bronchi and Esophagus by the Aid of the Fluorescent Screen. (Entfernung von Fremdkörpern aus dem Oesophagus und der Bronchien mit Hilfe des fluoroskopischen Schirmes). W. Freudenthal.
81 Intermittent Pulsus Paradoxus from Compression of the Subclavian Artery between the Clavicle and First Rib. G. Riebold.

71 and 72. **Ehrlich's "606" in Syphilis.**—Isaac reports 27 cases, all showing the promptly beneficial action of the drug; in some cases previous systematic mercurial treatment had proved ineffectual. In an average of 10 days the patients were entirely freed from even extremely severe manifestations of the disease. No serious by-effects were observed but in 2 cases there was a febrile and painful local reaction compelling the use of large doses of morphin for several days. The Wassermann reaction was still positive by the sixth week in all but one patient. Michaelis states that he has not encountered any trace of threatening by-effects in his 71 syphilitic patients treated with Ehrlich's "606."

73. **Treatment of Large Intestine with Gas or Sprays.**—Skaller applies the drug topically in the form of a spray, borne along on a jet of oxygen under pressure. The outflow of the medicated gas is provided for by an aspirating device.

Experiments on dogs, he states, have demonstrated the practicability and harmlessness of this method of medicating the intestines, the oxygen and spray penetrating to a greater distance and into all crevices much more effectually, he says, than is possible with a fluid.

### Correspondenz-Blatt für Schweizer Aerzte, Basel

*August 20, XL, No. 24, pp. 753-784*

82 *Diagnostic Importance of Ulcerations on the Palate in Typhoid. (Ueber den diagnostischen Wert der typhösen Gaumengeschwüre). M. Lüdin.

82. **Ulceration on the Palate as Sign of Typhoid.**—The general symptoms and the development of a typical ulceration on one side of the palate in the 2 cases reported suggested typhoid fever, but the further course of the disturbances contradicted this assumption. Both patients were tuberculous but the ulceration had no features characteristic of a tuberculous lesion. In the experiences at the Basel medical clinic these ulcerations of the palate were observed in 11.76 per cent. of the 68 cases of typhoid in the last 3 years, but the 2 cases reported show that they are not pathognomonic of typhoid.

### Deutsche medizinische Wochenschrift, Berlin

*August 25, XXXVI, No. 34, pp. 1553-1592*

83 *A New Tuberculin. (Ein neues Tuberkulin). F. J. Rosenbach.
84 Relative Resistance of Brazilian Malaria to Quinin. B. Nocht and H. Werner.
85 Nature of the Wassermann Reaction. J. Citron and F. Munk.
86 Porges' Reaction in Syphilis. (Die Porgessche Luesreaktion). W. de la Motte.
87 Alcohol Paste for Sterilization of the Hands. H. Selter.
88 Advantages of Tincture-of-Iodin Sterilization of Field of Operation. W. Müller.
89 Direct Visual Inspection of Upper Respiratory Tract in Children. (Bedeutung der direkten Untersuchungsmethoden der oberen Luftwege im Dienste der Kinderheilkunde). B. Meyer.
90 *Vibration Massage Catheter. (Wasserdruckmassage. Neues System der Vibrationsmassage für Körperhöhlen). H. Dreuw.
91 Improved Technic for Injection of Ehrlich's "606." (Zur Technik der Injektion von Dioxy-diamido-Arsenobenzol). W. Wechselmann and Lange.

83. **Rosenbach's Tuberculin.**—Rosenbach produces his tuberculin by the growth of the *Trichophyton holosericum album* on living tubercle bacilli and their culture medium. The toxicity of the tubercle bacilli seems to be materially reduced by the action of this fungus, while the other properties of the bacilli do not seem to be altered. The Rosenbach tuberculin is thus much less toxic, he asserts, while the doses can be larger and the therapeutic efficiency is far greater than that of ordinary tuberculin. He relates extensive experience with it in pulmonary and surgical tuberculosis and lupus at the university policlinic, at Göttingen, in his charge.

90. **Vibration Massage Catheter.**—The catheter is closely studded with holes and tap water introduced through it induces a vibration which massages the cavity, as Dreuw explains in detail with illustrations. The catheter can be enclosed in a rubber bag or not as desired. The same principle of vibration massage from running water, he adds, can be applied to instruments of different shapes designed to be introduced into the body cavities.

### Deutsche Zeitschrift für Chirurgie, Leipsic

*August, CVI, Nos. 1-3, pp. 1-396*

92 *Bacteriologic Study of Surgical Tuberculosis. (Beitrag zur Frage der Verschiedenheit der Tuberkulose des Menschen und der Tiere). H. Burckhardt.
93 Injuries of the Semilunar Fibrocartilages in the Knee. (Die Meniskusverletzungen des Kniegelenks). K. Körber.
94 Isolated Tearing-Out of the Crucial Ligaments of the Knee. (Ueber die isolierte Ausreissung der Ligamenta cruciata des Kniegelenks). O. Köhler.
95 Slow Progressive Peritonitis and Abdominal Phlebosclerosis with Desquamation of Epithelium—All of Traumatic Origin. F. Gangitano.
96 Treatment of Typical Fracture of the Radius. W. Krantz.
97 Joint Disease with Tabes. Three Cases. (Gelenkerkrankung bei Tabes dorsalis). M. Matsuoka.
98 *Congenital Hypertrophy and Stenosis of the Pylorus in Infants. P. Dilg.

92. **Bacteriology of Surgical Tuberculosis.**—Burckhardt found bovine tubercle bacilli in 3 out of 29 cases of tuberculous bone or joint processes, and also in 1 out of 6 cases of tuberculous peritonitis and in 1 out of 9 cases of tuberculous glandular processes in the neck. No bacilli of the bovine type were discovered in his 4 cases of urogenital tuberculosis. He thus found bovine tubercle bacilli in 5 out of 49 cases of surgical tuberculosis selected at random, the patients being of all ages and of both sexes. He gives a detailed account of his clinical experiences and of extensive bacteriologic study of the 49 strains of tubercle bacilli and 3 from animals. There was nothing in the clinical course or the anatomic findings in the 5 bovine cases to distinguish them from the human type. The outcome, however, was unusually favorable. In the 3 joint cases no special focus could be discovered in the bone, as in the human bacilli cases.

98. **Congenital Stenosis of the Pylorus in Infants.**—In the case described the pylorus was remarkably thick, the walls encroaching on the lumen which was further obstructed by ridges of mucosa projecting into it. This case emphasizes the importance of early gastro-enterostomy if the threatening symptoms are not promptly alleviated by lavage and dieting.

### Fortschritte der Medizin, Leipsic

*August 11, XXVIII, No. 32, pp. 993-1024*

99 Importance of Creosote in Pulmonary Tuberculosis. (Wirkungsweise des Kreosots bei Lungentuberkulose und die Notwendigkeit einer chronisch-intermittierenden Behandlung der Lungentuberkulose mit Kreosot). K. Martin.

### Jahrbuch für Kinderheilkunde, Berlin

*July, LXXII, Supplementary Number, pp. 1-284*

100 Study of Casein in Breast Milk. (Ueber die Einheitlichkeit des Frauenmilchkaseins). L. Langstein and F. Edelstein.
101 Lime Content in Breast Milk. (Das Kalkangebot in der Frauenmilch). H. Bahrdt and F. Edelstein.
102 Research on Respiratory Interchanges in Infants. (Die Methodik der Untersuchung des respiratorischen Stoffwechsels am Säugling). H. Bahrdt and F. Edelstein.
103 Action of the Food Constituents of Breast Milk on the Intestinal Flora in Infants. (Wirkung der Nahrungskomponenten der Frauenmilch auf die Darmflora des Säuglings). H. Bahrdt and H. Beifeld.
104 The Amino-Acids in Infants' Urine. (Die Fraktion der Aminosäuren im Säuglingsharn). F. W. Schlutz.
105 Epidemic Poliomyelitis in Austria. (Die Epidemie der Poliomyelitis acuta epidemica [Heine-Medinsche Krankheit] in Wien und Niederösterreich im Jahre 1908). J. Zappert.
106 Volume of Blood, Hemoglobin Content and Oxygen Avidity of the Blood in Pale and Healthy Appearing Children. (Die Blut- und Hämoglobinmenge und die Sauerstoffkapazität des Blutes bei gesund und bei blassaussehenden Kindern). E. Müller.
107 *Influence of Seasons and Other Factors on Infant Death-Rate. (Weitere Beiträge zur Statistik der Säuglingssterblichkeit). S. Rosenfeld.
108 Infant Mortality in Italy. (Die Kindersterblichkeit in Italien). A. Borrino.

107. **Study of Infant Mortality.**—Rosenfeld has been studying the statistics in regard to the infant death-rate in Austria during the last 25 years, comparing the influence of the age of the infants, the mode of feeding, the seasons, etc. His conclusions are that the almost constant drop in infant mortality since 1895 is not to be ascribed to improved hygienic conditions, better feeding, etc., but is the work of certain still unknown, possibly climatic, factors which are at present beyond our control. Nothing else, he declares, will explain the facts observed, especially the almost universal sudden increase in the infant death-rate in certain years and the almost equally universal decline in others, other conditions being apparently the same at both times.

### Medizinische Klinik, Berlin

*August 28, VI, No. 35, pp. 1359-1394 and Supplement*

109 Nasal Reflex Neuroses. O. Piffl.
110 Localization of Psychic Processes in the Brain. (Einige prinzipielle Bemerkungen zur Frage der Lokalisation psychischer Vorgänge im Gehirn). K. Goldstein.
111 *Ehrlich's "606" in Twenty-five Cases of Syphilis. (Die Behandlung der Syphilis mit Ehrlich-Hata 606). K. Junkermann.
112 Colon Bacilli Infection of the Urinary Passages. (Die Kolliinfektion der Harnwege). D. Raskai.
113 *Modification of Momburg Belt Constriction for Hemostasis. (Zur Momburgschen Blutleere). D. Gelyi.
114 Electrode Cage for Therapeutic Use of Static Electricity. (Therapeutische Anwendung der Intensiv-Franklinisation mit dem "Polyelektroid nach Dr. Fisch"). M. Fisch.
115 Determination of Viscosity of the Blood. (Weitere klinische Beiträge zur Viskositätsbestimmung). E. Bachmann.
116 *Determination of the Arterial Blood Pressure in Man. (Praktische Anleitung zu einer Messung des arteriellen Blutdrucks beim Menschen). H. v. Recklinghausen.

111. **Treatment of Syphilis with "606."**—Junkermann reports 25 cases in which Ehrlich's remedy was used; no injurious by-effects were observed although in two weakly patients there was a brief change in the heart rhythm with sweating

and anguish, but no nervous symptoms. No spirochetes could be discovered in the lesions after the injections.

113. **Modified Momburg Belt Constriction.**—Gelyi has found that the abdominal aorta can be compressed and the same results obtained as with the Momburg belt by an apparatus consisting of a steel and rubber pad, mounted in a standard fastened to the edge of the operating table. With a screw the pad is lowered to compress the region of the abdominal aorta, as by the Momburg belt, but the waist is not constricted. Compression can be applied as gradually as desired; when it is no longer needed the whole device is unscrewed from the table.

116. **Measurement of the Arterial Pressure.**—The construction and mode of action of von Recklinghausen's tonometer are described in detail with the principles on which it is based and the interpretation of the findings.

### Monatsschrift für Kinderheilkunde, Leipsic

*IX, No. 4, pp. 201-280. Last indexed Sept. 3, p. 898*

117 Early Roman Appeal to Mothers to Nurse their Babes. (Der Philosoph Favorinus als Vorkämpfer für die natürliche Säuglingsernährung). A. Schlossmann.
118 Mineral Metabolism in a Healthy Nursling. (Zur Kenntnis des Mineralstoffwechsels beim gesunden Brustkind). L. Tobler and F. Noll.
119 *Infant Mortality in the Summer. (Ueber den Sommertod der Säuglinge). E. Klose.
120 *Pneumonia and Acute Fluctuations in Weight in Dyspeptic Infants. (Pneumonie und akute Gewichtsschwankungen bei ernährungsgestörten Säuglingen). N. Berend.

119. **Infant Mortality During the Heated Term.**—Klose ascribes the excessive mortality among infants in a large part to the acute loss of water during the summer heat. The heat is not so injurious for the infants when the humidity is high. His experiments and research and comparative study of the work of others confirm the assumption that dry hot summers are particularly injurious for infants.

120. **Pneumonia in Dyspeptic Infants.**—Berend states that the mortality among infants in Hungary is always as high or even higher in the winter and spring than in the summer. Pneumonia is frequent, and he ascribes it to the unhygienic methods of dressing and caring for the infants. Breast feeding is the rule but the spacing is too short and the infants constantly suffer from overfeeding. His experience has shown that when the child loses suddenly in weight the resulting modification of conditions in the circulation favors catarrhal infection. Pneumonia in infants seems to follow an abrupt decline in weight. He found a loss of weight of over 300 gm. in 2 days or of over 500 gm. in 5 or 6 days recorded in 71 out of 400 infants in his service at Budapest in the last 2 years. And pneumonia developed at once in 41 out of these 71 infants. In 41 out of his total material of 78 cases of pneumonia an abrupt decline in weight had preceded the development of the disease. The children were all under treatment for some digestive disturbance. The pneumonia in these 41 cases developed at once after the loss in weight, even when the infants were isolated or there were no other cases of catarrhal affections on hand. His assumption of the causal importance of the abrupt decline in weight in the production of the pneumonia emphasizes the necessity for forestalling and warding off any abrupt decline in weight from loss of fluids, leaving the blood abnormally thick and the viscosity abnormally high, and altering the osmotic processes throughout, thus modifying the natural immunity defenses. In the last 100 infants with chronic digestive disturbances taken into the hospital, 30 had pronounced bronchopneumonia, 30 bronchitis or coryza, and 10 other infectious processes. Only 30 were free from some complicating infection. Even during the summer fully half the infants have a catarrhal respiratory affection when first seen.

### Münchener medizinische Wochenschrift

*August 23, LVII, No. 34, pp. 1769-1816*

121 Hypersusceptibility in Relation to Infection and Immunity. (Rolle der Ueberempfindlichkeit bei der Infektion und Immunität). A. Schittenhelm and W. Weichardt.
122 *Experiences with Ehrlich's "606" in Syphilis. C. Fraenkel and C. Grouven.
123 Technic for Treatment of Syphilis with Ehrlich's "606." (Zur Technik der Behandlung mit dem Ehrlich-Hataschen Syphilismittel). K. Alt.
124 *Sciatica Due to Disturbances in the Spinal Roots. (Ueber Wurzelischias). H. Stursberg.
125 Colorimetric Determination of Grape-Sugar in Urine. (Ueber eine kolorimetrische Bestimmung des Traubenzuckers im Harn). W. Autenrieth and T. Tesdorpf.
126 *Improved Technic for Amputation on Account of Gangrene and Diabetic Phlegmons. W. Kausch.
127 *Kaolin and Talcum Powder as Possible Transmitters of Infection. (Bolus alba als Träger der Infektion). P. Zweifel.
128 *Sterilization of Women with the Roentgen Rays. L. Görl.
129 Topical Diagnosis of Hemianopsia. F. Best.
130 *Emaciation of the Face Corrected by Injection of Human Fat. (Ueber einen Fall von fortschreitendem Schwund des Fettgewebes und seinen kosmetischen Ersatz durch Menschenfett). E. Holländer.
131 Formation of Beta-Oxybutyric Acid from Acetic Acid. (Bildung von β-Oxybuttersäure aus Azetessigsäure). E. Friedmann, C. Masse and L. Blum.

122. **Experiences with Ehrlich's "606."**—Fraenkel and Grouven conclude from their experiences with "606" in over a hundred cases of syphilis that it is undoubtedly a remedy which will mark decided progress in treatment of this disease and possibly of others, but they report a fatality after its intravenous administration which they ascribe to an individual hypersusceptibility to arsenic. The patient was a waiter of about 25 who had suffered for years from severe disturbances in speech, word blindness, etc., evidently of syphilitic origin, and had been in the psychiatric clinic for 18 months on that account. The drug was injected in a small amount of water (0.4 gm. to 15 c.c. of water). Fifteen minutes later symptoms of serious arsenic poisoning developed, proving fatal in 3½ hours. Autopsy showed extensive foci of softening in the left temporal lobe and distinct amounts of arsenic were recovered from the spleen, lungs and liver, the only organs examined for this purpose. Since this occurrence the intravenous route is no longer used in the clinic. No appreciable by-effects were observed in any of the other cases. In 30 the fate of the arsenic in the body was investigated and it was found that from 6 to 10 mg. was eliminated daily in the urine during the first week, and from 6 to 8 mg. in the second week, but after this no further traces could be detected except in a few cases in which 2 mg. was found, and up to 9 mg. in one case. The drug induced a decided and early turn for the better, they say, in all the cases except the one mentioned above, surpassing that ever attained by mercury.

124. **Radicular Sciatica.**—Stursberg relates the details of 7 cases which demonstrate that the affection which we call sciatica is not always restricted to the region innervated by the sciatic nerve. Sensory phenomena were observed indicating the participation of roots in the sacral, lumbar and thoracic regions. Some lesion in the posterior roots would explain without difficulty the syndromes observed and this assumption points the way to more effectual treatment. The occasional simultaneous or alternate occurrence of sciatica and lumbago in the same patient confirms this assumption. Lumbar puncture might possibly give relief, or heat applied to the sacral region; measures directed to the sciatic nerve alone are inadequate in this class of cases.

126. **Technic for Amputation for Diabetic Gangrene.**—Kausch cuts straight across the limb in a single plane and leaves the whole wound open. By this means he avoids all crevices and nooks where infection might lurk in extravasated blood, etc. In his first case the soft parts gradually retracted, and after the third week he applied extension to the limb. By the twenty-sixth day the soft parts had nearly covered the bone and they were drawn together with adhesive plaster over the small gap still left, and healing was complete by the end of the third month. The patient was a man of 51. The gangrene and phlegmons had followed a trifling injury of the foot and had not been arrested by amputation of the foot and leg, by the ordinary technic, followed by fistulas, but the whole syndrome subsided immediately after the amputation in a single plane at the middle of the thigh and now with careful diet the patient has no longer any sugar or albumin in the urine. The results were equally good in another diabetic. He attempted in this case during the earlier amputations to wash out clots in the artery by injecting salt solution above. The attempt failed in this instance but he thinks that this might be of advantage in certain cases of gangrene. In his first case the bone projected 6.5 cm. from the soft parts on one side and 2.5 cm. on the other, but the adhesive plaster extension with a weight of from 2 to 4.5

kgm. soon brought the soft parts down to cover the stump. This case exemplifies how a moderate diabetes of long standing can be suddenly transformed into the most serious type by superposed infection; the sugar ran up to 120 gm. with intake of 40 gm. carbohydrates, the urine remaining persistently acid although 18 gm. of sodium bicarbonate were being taken daily. The phlegmons aggravated the diabetes and the aggravated diabetes reacted in turn on the phlegmons—a vicious circle. After the focus had been removed the amputation wound healed as if there had been no diabetes; the soft parts bore as if normal the compression necessary for the extension traction. He insists on the importance of keeping diabetics entirely free from glycosuria. In 2 other cases he was unable to induce the patients to obey his dietetic restrictions after amputation on account of diabetic gangrene, and the other leg became gangrenous. He thinks this might not have occurred if the patients had dieted to keep the urine entirely free from sugar.

127. **Kaolin as Transmitter of Infection.**—Zweifel has been using since 1901 kaolin, fuller's earth or bolus alba, as it is variably called, as a dressing for the umbilicus, and always found it satisfactory. He had the kaolin sterilized by baking for several hours in large jars, at a temperature of from 170 to 200 C. Recently, however, 4 of the infants developed tetanus, to which 3 succumbed, and the fourth was saved only by vigorous serotherapy. No cause for the tetanus could be discovered except the possibility that the umbilicus had been dressed with some kaolin which by mistake had not undergone the supposed sterilization. This experience suggests that bolus alba, talcum powder, etc., should never be used to dress wounds, dust gloves, etc., in the clinic without thorough preliminary sterilization. He tests the thoroughness of the sterilization by Stich's technic, that is, the melting of a strip of alloy in a test-tube introduced into the center of the material being sterilized. Unless the alloy is melted he refuses to use the material in question.

128. **Sterilization of Women by the Roentgen Rays.**—Görl reports 9 cases in which the menopause was brought on by Roentgen exposures. Some of the women required 80 exposures for the purpose, and this slow, gradual extinction of the ovarian functioning he regards as one of the advantages of the method. He states that the general stimulating action of the rays was soon evident in the improved general health; no climacteric disturbances were noted in any case, and the heart seemed to be favorably influenced in the myoma cases. The exposure was never strong enough to induce erythema, and thus it cannot act directly on a myoma, but the myomas subsided nevertheless, probably secondary to the sterilization process. The method is especially indicated, he says, for menorrhagia from a cardiac defect, nephritis or myoma when operative treatment is inadvisable for any reason.

130. **Cosmetic Injection of Human Fat.**—In Holländer's case a chorus girl of about 21 became strikingly thin in the face and neck while the rest of the body was well nourished. The progressive loss of adipose tissue was corrected by injection of a mixture of equal parts of tallow and human fat, filling out all the hollows in the face. He has ascertained by experiments that the fat is soon absorbed, leaving a porous scaffolding of tallow which forms an organic combination with the connective tissue. His patient's complexion had been sallow, which he found had been the result of the relaxation of the skin and contraction of the elastic fibers, as at once after the contours had been rounded out the skin became rosy again.

### Wiener klinische Wochenschrift, Vienna

*August 25, XXIII, No. 34, pp. 1221-1248*

132 Relations between Tumor Cells and Blood Serum. (Beziehungen zwischen Tumorzellen und Blutserum). E. Freund and G. Kaminer.
133 *Indications for Exclusion of the Pylorus. (Indikationen der Pylorusausschaltung). A. Jianu.
134 *Indications for Atropin in Internal Medicine. (Die Atropinkur bei Ulcus ventriculi und die Indikationen des Atropins in der internen Medizin). K. Schick.
135 Favorable Experiences with Ehrlich's "606" in Twenty Cases of Syphilis. E. Eitner.
136 *Bladder Disturbances after Use of Ehrlich's "606" in Syphilis. (Ueber Blasenstörungen nach Anwendung von Präparat 606). K. Bohac and P. Sobotka.
137 Necessity for Statistics of Industrial Morbidity and Mortality. S. Rosenfeld. Commenced in No. 33.

133. **Treatment of Stenosis of the Pylorus.**—Jianu advocates resection or exclusion of the pylorus as the only rational treatment of stenosis unless the extent of the lesion and adhesions or the general condition prevents such a serious operation. Gastro-enterostomy he regards as merely a palliative operation, only to be preferred in case of necessity.

134. **Atropin in Gastric Ulcer and in Internal Medicine in General.**—Schick reports the prompt healing in some very serious, obstinate cases of gastric ulcer under a systematic course of atropin, and he expatiates on the importance of this too much neglected remedy in internal medicine. His experiences parallel those of von Tabora; the atropin evidently soothed and relaxed the musculature of the stomach and pylorus while checking the gastric secretion. When all other measures have failed and operative treatment seems indispensable, he injects subcutaneously, twice a day, from 0.001 to 0.0015 gm. atropin sulphate, morning and evening, keeping this up from 4 to 10 weeks with the patient on a milk-cream diet. The healing of the ulcer in his cases was counteracted by motor insufficiency of the second degree and hypersecretion. The atropin paralyzes the vagus innervation of the stomach, which is evidently functioning abnormally in these cases. The subjective symptoms subside generally at once, and perseverance with the atropin reduces the tendency to excessive secretory functioning. The frequent discovery of vagus irritability with gastric ulcer is more than a casual coincidence; each aids in producing a vicious circle, fostered still further by reflex action. He has found atropin useful also in treatment of spastic constipation, spasmodic asthma, pylorospasm, lead colic, cardiospasm and gall-stone colic. By the relaxation induced by subcutaneous injection of atropin, the walls of the ducts allow the stone to pass along or to fall back into the gall-bladder. This treatment, he believes, might prove useful also in kidney-stone colic; Loewi has reported brilliant results from atropin in reflex vasomotor angina pectoris. Surgeons might find atropin useful also, Jianu says, in preparing patients with the status lymphaticus for operation. It is also useful to differentiate spastic contraction of the stomach from organic retraction of the stomach walls; in several cases of hour-glass stomach Schick noticed various signs indicating extreme excitability on the part of the vagus. Before giving atropin, the condition of the nervous system must be carefully investigated. If the vagus is abnormally irritable the drug can be given with confidence, he states, up to 0.001 or 0.002 gm. a day. In the absence of signs of abnormal excitability of this part of the nervous system the greatest caution is necessary; active delirium and other serious by-effects may be observed when the exact indications for it are not heeded.

136. Bohac and Sobotka discuss further their previously published experiences with "606," mentioned in THE JOURNAL, Sept. 3, 1910, p. 898.

### Zeitschrift für klinische Medizin, Berlin

*LXXI, Nos. 1-2, pp. 1-164. Last indexed August 20, p. 726*

138 Glycosuria and Fat Stools in Exophthalmic Goiter. (Glykosurie und Fettstühle bei Morbus Basedowii). W. Falta.
139 Roentgen Rays in Treatment of Exophthalmic Goiter. W. Falta.
140 Interaction of Glands with an Internal Secretion. III. (Ueber Chemotaxis). G. Bertelli, W. Falta and O. Schweeger.
141 Metabolism with Artificially Exaggerated Thyroid Functioning. (Zur Kenntnis des Stoffwechsels bei künstlichem Hyperthyreoidismus). E. Mayerle.
142 Atony of the Esophagus. (Dysphagia atonica. Pseudooesophagismus). G. Holzknecht and D. Olbert.
143 Thrombosis of the Coronary Arteries. W. P. Obrastzow and N. D. Straschesko.
144 Tropical Disease in Sumatra Resembling Typhoid Fever. (Pseudotyphus von Deli). W. Schuffner and M. Wachsmuth.
145 Clinical Study of Electrocardiograms. H. Eppinger and O. Stoerk.

### Zentralblatt für Chirurgie, Leipsic

*August 27, XXXVII, No. 35, pp. 1153-1184*

146 Technic for Resection of Large Intestine. (Zur Dickdarmresektion). Wilmanns.
147 *Thrombosis in the Pancreas. (Ueber den hämorrhagischen Infarkt der Bauchspeicheldrüse). A. Hofmann.

147. **Hemorrhagic Infarct in the Pancreas.**—Hofmann reports a case of hemorrhagic infarct of the pancreas in a woman of 57 who had suffered for years from cramps in the stomach, but she had never presented signs of jaundice. A sudden violent pain in the region of the umbilicus and collapse were the first signs of trouble in the pancreas, but she soon roused, though still complaining of intense abdominal pain. The entire abdomen was tender and slightly distended, the right lower portion bulging, pulse 90, temperature 38.6 C. The areas of greatest painfulness were in the stomach region and below the costal arch on each side; there was nothing to indicate sepsis, however. The pancreas was tamponed and drained, but septic symptoms then developed and the patient died the third day after the operation, which seemed to benefit her at first. Another patient is subject to paroxysmal exacerbations of a chronically recurring pancreatitis. In one such attack the pancreas was felt to be unusually hard and the merely exploratory laparotomy seemed to benefit, as all the disturbances subsided afterward. In this case an obliterating endarteritis is probably responsible for the recurring disturbances. The stormy onset with collapse followed by subsidence of the shock symptoms and relatively good pulse are characteristic of hemorrhagic infarct or apoplexy of the pancreas, especially in combination with the absence of motor restlessness and unimpaired consciousness with the signs of peritonitis—the clinical picture thus differing in these respects from that with perforation of a viscus. Another striking feature in the first case was the enormous distention of the cecum and ascending colon, evidently the result of compression of the transverse colon by the swollen pancreas. Drainage and tamponing are seen to be ineffectual treatment; Hofmann believes that if he had resected the infarcted segment of the pancreas the patient might have survived. At the autopsy this part shelled out readily without loss of blood.

### Zentralblatt für Gynäkologie, Leipsic

*August 27, XXXIV, No. 35, pp. 1161-1184*

148 Extraction of Dead Fetus in Transverse Presentation. (Ueber Dissectio fetus mit dem Küster'schen Rhachiotom). E. v. Seuffert.

### Zentralblatt für innere Medizin, Leipsic

*August 27, XXXI, No. 35, pp. 873-896*

149 The Blood in Carbon Monoxid Poisoning. (Hämatologische Untersuchungen bei Kohlenoxydvergiftung). O. Roth.

### Gazzetta degli Ospedali e delle Cliniche, Milan

*August 21, XXXI, No. 100, pp. 1049-1064*

150 *Acute Influenzal Urethrocystitis. G. Ghedini.
151 Alimentary Albumosuria. I. Belfiore.

150. **Influenzal Urethro-Cystitis.**—Ghedini reports what he thinks is the third case on record of acute inflammation of the urethra from the action of influenza bacilli in the blood. The 2 other cases were reported by Cohn and Klieneberger; a large number of cases of cystitis due to the influenza bacillus are on record. His patient was a woman of 35 with acute catarrhal gastro-enteritis and the influenza bacillus in the blood. As the symptoms of this were subsiding, signs of urethrocystitis developed and the temperature ran up again. It subsided the fourth day with a crisis and the symptoms on the part of the urethra and bladder had all disappeared by the end of the week. Comby has reported 3 cases of painful, rebellious and hemorrhagic cystitis of influenzal origin.

### Policlinico, Rome

*August, XVII, Surgical Section, No. 8, pp. 334-380*

152 *The Hypophysis Cerebri and Castration. (Ipofisi e castrazione). G. Fichera.
153 Oblique Internal Inguinal Hernia. (Studio dell'ernia inguinale obliqua interna o vescico-pubica). C. Mantelli. Commenced in No. 7.
154 Granulated Leukocytes in Pus. M. Abetti.

152. **The Hypophysis Cerebri and Castration.**—Fichera discusess the results of research in this line by various writers, including 4 monographs on the influence of castration in human beings and 10 on experimental work in this line. The hypophysis hypertrophies after castration, suggesting a possible correlation between it and the genital glands. The contradictory findings that have been published he explains as due to the different ages at which the castration was done; a pronounced influence on the size and functioning of the hypophysis is most likely, he says, when the castration is done in very young individuals.

### Riforma Medica, Naples

*August 21, XXV, No. 34, pp. 925-946*

155 Meiostagmin Reaction in Cancer. (Studio della reazione meiostagminica nei tumori maligni). C. Stabilini.
156 *Pseudocirrhosis of the Liver of Pericarditic Origin. C. Martelli.

156. **Pseudocirrhosis of the Liver of Pericarditic Origin.**—Martelli's patient was a boy not quite 5 years old and the clinical course and autopsy findings were typical of Pick's disease. At the same time, Martelli protests against the assumption that this is a special syndrome; ascites occurs with adhesive pericarditis just as cirrhosis of the liver, compression of the portal vein and peritonitis are liable to be accompanied by ascites. In neither case are there any grounds for setting up the syndrome as a special morbid entity. The child in his case had malaria when quite young and was brought with his family to New York at the age of 4. The emigration authorities did not allow the family to enter the country and they stayed at Ellis Island, he states, during the summer and fall, the heat, the crowding and poor food causing great discomfort. The child in question was taken there with an eruptive fever, probably scarlet fever, the sore throat, swelling of the feet and intestinal disturbances keeping the child in the hospital for 3 months, after which the family was deported to Italy. Signs of adhesive pericarditis developed a year later in the child, proving fatal in 10 months.

### Upsala Läkareförenings Förhandlingar

*New Series XV, Nos. 6-7, pp. 365-493. Last indexed July 23, p. 362*

157 Extracts from Writings of I. Hwasser, M.D., 1790-1860. E. Clasen.
158 Value of Local Skin Typhoid Test. (Om intrakutan tyfoiddiagnos). G. Bergmark.
159 Prospects of Future Progress in Obstetrics and Gynecology. Framtidsmål på förlossningskonstens och kvinnosjukdomarnes område). C. D. Josephson.
160 Palpation of Arteries. (Om Arterpalpation). R. Friberger.
161 Three Cases of Enteroliths. (Tre fall af tarmsten). H. Græve.

## Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

LIPPINCOTT'S NEW MEDICAL DICTIONARY. A Vocabulary of the Terms Used in Medicine and the Allied Sciences, with their Pronunciation, Etymology, and Signification, Including Much Collateral Information of a Descriptive and Encyclopædic Character. By Henry W. Cattell, M.D., Editor of International Clinics. Flexible Leather. Price, $5. Pp. 1,108, with illustrations in the text. Philadelphia: J. B. Lippincott Co., 1910.

A SYSTEM OF MEDICINE. By Many Writers. Edited by Sir Clifford Allbutt, M.D., Regius Professor of Physic in the University of Cambridge, and Humphry D. Rolleston, M.D., Senior Physician, St. George's Hospital. Vol. VII. Diseases of the Muscles, the Trophoneuroses, Diseases of the Nerves, Vertebral Column, and Spinal Cord. Cloth. Price, $6 net. Pp. 900, with 98 illustrations. New York: Macmillan Co., 1910.

ANATOMY, DESCRIPTIVE AND APPLIED. By Henry Gray, F.R.S., Fellow of the Royal College of Surgeons. Eighteenth Edition. Revised and re-edited by Edward A. Spitzka, M.D., Professor of General Anatomy in the Jefferson Medical College, Philadelphia. Cloth. Price, $6 net. Pp. 1,496, with 1,208 illustrations. Philadelphia: Lea & Febiger, 1910.

MANUAL OF HUMAN EMBRYOLOGY. By Many Writers. Edited by Frank Keibel, Professor in the University at Freiburg i. Br., and Franklin P. Mall, Professor of Anatomy in the Johns Hopkins University, Baltimore. In Two Volumes. Volume I. Cloth. Price, $7.50. Pp. 548, with 423 illustrations. Philadelphia: J. B. Lippincott Co., 1910.

NORMAL HISTOLOGY, WITH SPECIAL REFERENCE TO THE STRUCTURE OF THE HUMAN BODY. By George A. Piersol, M.D., Professor of Anatomy in the University of Pennsylvania. Eighth Edition. Cloth. Price, $3.50. Pp. 418, with 438 illustrations. Philadelphia: J. B. Lippincott Co., 1910.

A TEXT-BOOK OF VETERINARY ANATOMY. By Septimus Sisson, S.B., Professor of Comparative Anatomy in Ohio State University, Columbus, Ohio. Cloth. Price, $7 net. Pp. 826, with 528 illustrations. Philadelphia: W. B. Saunders Co., 1910.

THE SURGERY OF CHILDHOOD. Including Orthopedic Surgery. By D. Willard, M.D., Professor of Orthopedic Surgery, University of Pennsylvania. Cloth. Price, $7. Pp. 800, with 729 illustrations. Philadelphia: J. B. Lippincott Co., 1910.

DR. JESSNER'S DERMATOLOGISCHE VORTRÄGE FÜR PRAKTIKER. Heft 8. Dermatologische Heilmittel. (Pharmacopœa dermatologica). Third Edition. Price, 1.60 marks. Pp. 96. Wurzburg: Curt Kabitzsch (A. Stuber's Verlag), 1910.

DR. JESSNER'S DERMATOLOGISCHE VORTRÄGE FÜR PRAKTIKER. Heft 5. Die innere Behandlung von Hautleiden. Third Edition. Paper. Price, 85 marks. Pp. 49. Würzburg: Curt Kabitzsch (A. Stuber's Verlag), 1910.